

THE AMERICAN
PUBLIC LIBRARY
BUILDING

q022 W56am (2)

Keep Your Card in This Pocket

Books will be issued only on presentation of proper library cards.

Unless labeled otherwise, books may be retained for two weeks. Borrowers finding books marked, defaced or mutilated are expected to report same at library desk; otherwise the last borrower will be held responsible for all imperfections discovered.

The card holder is responsible for all books drawn on this card.

Penalty for over-due books 2c a day plus cost of notices.

Lost cards and change of residence must be reported promptly.



Public Library
Kansas City, Mo.

Keep Your Card in This Pocket

REPRODUCED FROM THE ORIGINAL

THE AMERICAN PUBLIC LIBRARY BUILDING:

Its planning and design with
special reference to its
administration and service:

by

Joseph L. Wheeler, Librarian, and
Alfred Morton Githens, Architect

COPYRIGHT 1941 BY CHARLES SCRIBNER'S SONS

PRINTED IN THE UNITED STATES OF AMERICA

*All rights reserved. No part of this book may be reproduced in
any form without the permission of Charles Scribner's Sons*

To

Mabel Archibald Wheeler

Charlotte Sands Githens

F O R E W O R D

This introduction has been written, not for the purpose of throwing light upon the contents of the volume, or of appraising its value to the librarian, architect, trustee or general reader. It has been written rather to express the appreciation of the Carnegie Corporation of New York to the two busy professional men who have for some years been engaged upon its preparation.

In the planning and erection of the Enoch Pratt Free Library in Baltimore, Joseph L. Wheeler and Alfred Morton Githens demonstrated their capacity to work together, to respect one another's judgment, to enjoy one another's comradeship. Such close team work on the part of men in different professions is happily not unique, but it is sufficiently rare to have attracted the attention of a foundation traditionally interested in the American public library, and conscious of the need for a new and authoritative book on the design and operation of library buildings. The Carnegie Corporation was most happy when it succeeded in placing the task of preparing such a book upon the shoulders of these gentlemen, and is most grateful now that under conditions of steadily increasing difficulty they have brought their task to so satisfactory a conclusion.

FREDERICK P. KEPPEL,
President, Carnegie Corporation of New York

May 14, 1940

A C K N O W L E D G M E N T

The authors are deeply grateful to more than three hundred architects and librarians and others who have so willingly contributed plans, photographs and information which form the background of this book. Though for lack of space, they may not see their buildings or their ideas represented, each item of experience has been woven into the text during its development.

Several colleagues were generous enough to read considerable portions of the manuscript at various stages and gave helpful suggestions: Doctors Carleton B. Joeckel and Theodore W. Koch, Misses Ethel Fair, Clara W. Herbert, Marian Humble, Harriet C. Long, Ethel McCullough, Mary J. Messler, Margery Quigley, Althea Warren, Sarah V. Lewis, Ida F. Wright, Messrs. Orlando C. Davis, Matthew S. Dudgeon, William J. Hamilton, Judson T. Jennings, John B. Kaiser, Ralph Ulveling, William Webb, William F. Yust, and the late Arthur L. Bailey. Mr. Francis Keally, architect, Mr. A. L. Powell of the General Electric Company, Messrs. R. C. Engelken, Walter Tusch and P. J. Rienstra, engineers, Miss Martha Wilson, Librarian at Springfield, Ill., and the late Mrs. Betsy Foye Veazey, in charge of Branches and Stations at the Los Angeles Public Library, gave a great deal of study and help on a number of subjects. On statistics Mr. William H. Clift, Statistician of the American Library Association, Mr. N. Orwin Rush, while a student at Columbia Library School, and Mr. Emerson Greenaway, now Librarian at Worcester, Mass., were most diligent, while Mr. Arthur H. Woodward made many suggestions during his work in making most of the drawings. Thanks also to the many present or former members of the Enoch Pratt Library staff, and most of the department heads, for varied editorial and other help, especially to Pauline M. McCauley, Amy Winslow, Edith G. Bond, Florence M. Meredith, Marie B. Pfeiffer, Beverly Magee, Harold W. Tucker, Doctor Robert S. Alvarez. Their generosity in giving personal time

is most sincerely acknowledged, as is the cordial attitude of the Enoch Pratt Library Trustees in allowing the clerical work to be absorbed by the Library.

Whatever merit three of the chapters may have is very largely due to unusual cooperation from Miss Lucile Morsch, Head of the Catalog Department of the Enoch Pratt Library, Mr. Angus Macdonald, President of Sneed & Company, who prepared the first drafts of the two chapters on Catalog Departments and on The Library Book Stack, and Mr. Harry Datz, Manager of the Library Bureau Division of Remington-Rand Company, who revised and improved the first drafts of the chapters on Shelving and Furniture. As additions and emendations were made in the final drafts these three major contributors are not to be considered responsible for any shortcomings of the final chapters.

Finally, to Mr. Charles Butler, Chairman of the Education Committee of the American Institute of Architects, to Doctor Frederick P. Keppel, President, and to Mr. Robert M. Lester, Secretary of the Carnegie Corporation of New York, the authors feel a deep gratitude. Their quick response to the idea of the book, the consequent grant made by the Corporation through the Institute, and their support and continued patience promoted the completion of this protracted undertaking. It has involved far more research and preparation than had been foreseen by the architect and librarian who started out so confidently in 1934, in the face of the demands of their regular duties.

It is hoped that this work will stimulate new solutions of library planning and design, new devices and conveniences, and further studies, statistical research, special articles, and other books, all greatly needed.

JOSEPH L. WHEELER

ALFRED MORTON GITHENS

CONTENTS

Part 1 · Fundamentals

Chapter 1	The Modern Library Building: Its Functions and Evolution	1
Chapter 2	Generally Accepted Principles of Library Planning	13

Part 2 · The Trustees' Program for a Building Project

Chapter 3	Developing a Program: The Trustees' Duties and Procedure	15
Chapter 4	Statistical Data from the Library Background (Population, Bookstock, Circulation, etc.)	24
Chapter 5	Computing Building Size and Cost from Given Data	38
➤ Chapter 6	Location and Placement on Site, for Greatest Public Service	45
➤ Chapter 7	Building Operating Costs as a Factor in Library Planning	52
Chapter 8	Architect and Technical Advisory Service	55
➤ Chapter 9	Plans, Specifications and Contracts	63
➤ Chapter 10	Cubic Foot Cost and Cost Breakdown	68

Part 3 · The Elements and Their Relationships

Chapter 11	Schedule of Building Elements and Areas	75
Chapter 12	Levels, Entrances, Halls, Stairs, Elevators	82



Compton Branch of the Los Angeles County Library. 1936. 48 x 99 ft. Entrance and exit doors are separated by a glass brick panel, throwing light over the circulation desk which faces inward and avoids the glare. H. L. Gogerty, architect.

reflect the high ideals and purposes of the people, and to plan its arrangement so that its services may be carried on most effectively is a dual challenge to the architects of America.

Public officials, civic leaders, and library trustees must be made to realize that good books and printed information are vital to a community, and that library use reflects the spontaneous individual desires and ambitions of the people themselves. "More than any other institution it is an index to the cultural standards and tastes of the city or town that it serves."¹

MAJOR FUNCTIONS

To make clear to trustees and architects the chief library functions we give a list of activities which are to be found in all effective modern libraries except the smallest, though not all may be assigned special rooms in any given library. They are arranged somewhat in the order of their development, the later items being the most specialized. A detailed checklist is found in Chapter 11.

1. To select, acquire, and catalog books and other printed matter for the use of the community—Preparatory Departments: Order Work, Cataloging, Public Catalog.
2. To arrange and display books so as to facilitate and encourage their use—Open Shelf Room.

3. To provide accommodations for readers—Reading Rooms.
4. To house books for storage and safety—Shelving and Stacks.
5. To lend books—Circulation or Delivery Desk or Room (including Registration).
6. To give book service to children—Children's Department.
7. To find information in books—Reference Department. (see also No. 12)
8. To provide administration and personnel quarters for all its services—Offices, Workrooms, and Staff Room.
9. To maintain and operate the building itself—Janitor quarters, Heating, and Lighting Equipment.
10. To give book service correlated with schools—Work with Schools.

¹W. B. Munro, *Municipal Administration*. N. Y., 1934, p. 461, also W. L. Bailey, "Community needs and library services," *Ill. Libs.*, suppl. 11:116-20, Oct., 1929; E. L. Thorndike and Ella Woodyard, "Individual differences in American cities; their nature and causation," *Am. Jour. of Sociol.*, 43:206, Sept., 1937; also E. L. Thorndike, *Your City*. N. Y., 1939, pp. 63, 194, 195. Among eleven essential factors Thorndike selects to determine the desirable qualities which the population of a community may possess to make it a good and pleasant city in which to live, he places per capita library book circulation and per capita library support near the top. See also his *Human Nature and the Social Order*. N. Y. 1940, p. 522.

11. To maintain additional outlying points of service—Branches and Stations.

12. To handle

- | | | |
|--|---|-------------------|
| (a) City, state and government publications
(b) pamphlets
(c) maps
(d) pictures of inexpensive informational nature | } | Reference
Work |
|--|---|-------------------|

13. To provide special service in one or more

²See also the principles or recommendations of the English librarian, Edward Edwards in his *Memoirs of Libraries*. London, 1859, v. 2, p. 730. The authors of the present volume had written a somewhat extended chapter on the history of American public library buildings, but as it seemed extraneous to the practical purposes of this book, wherein space is at a premium, and as it is a subject of great interest, and so badly in need of a separate book of its own, the chapter was omitted. One serious attempt was made in 1902, by an English architect; his excellent review, though falling short of an understanding of the elements, remains one of the valuable sources. (S. K. Greenslade, "Libraries in the United States," Reprinted from *Journal of the Royal Institute of British Architects*, Mar. 17, 1903. In *Am. Arch.* 77: July 19 Aug. 30, 1902.)

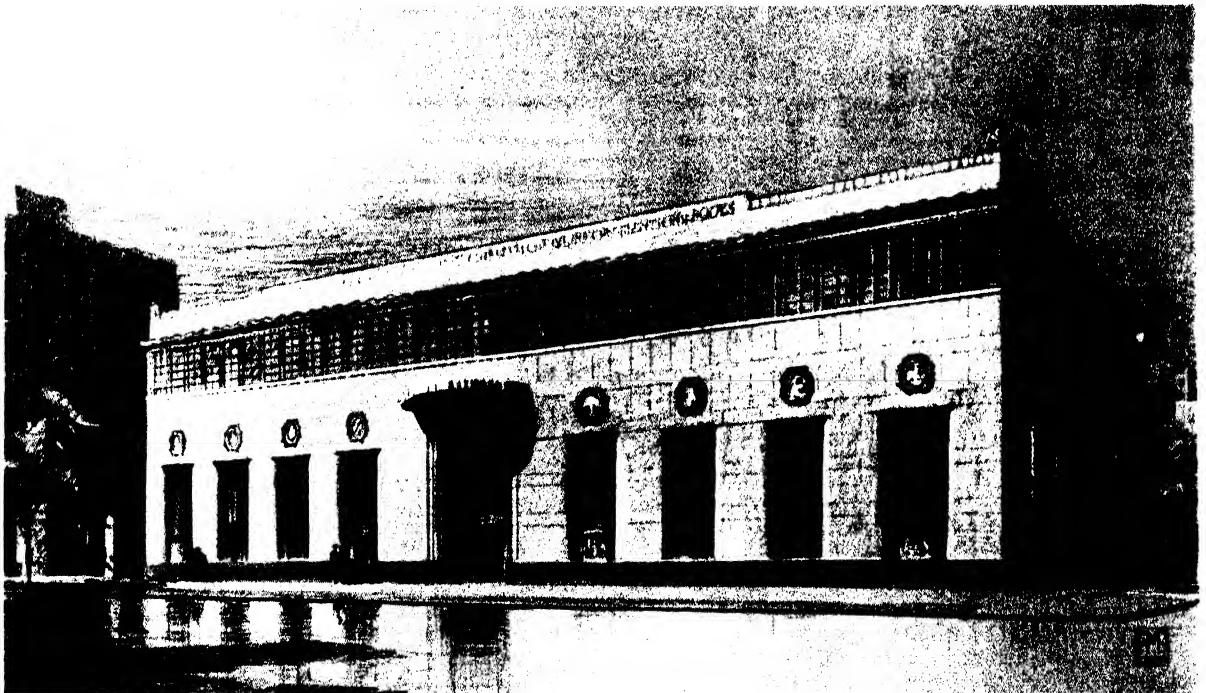
subjects appropriate to the community, and increasing in number with size of city—Subject Departments.

14. In larger libraries, as a phase of Adult Education, to provide Readers' Advisory service, guiding adult reading choice and sequence toward some definite self-cultural goal. Nor can we overlook the implications of the library's larger services to scholarship; the accumulation of materials, making materials available, personal assistance to scholars, directing research publications, and stimulating scholarly interest and attitudes, including the scholarly enthusiasms of youth.

EVOLUTION

Library planning in the United States has undergone rapid and progressive changes since the first large projects, built from one hundred to sixty years ago.² Then the approved type was a single great hall surrounded by tiers of galleries, divided into alcoves, each alcove lined with books on a special subject. The entrance

Designed for Springfield, Ill., but not used. This building attempts to express the character of a modern library by the sidewalk-level entrance, plenty of daylighting through the large main floor windows, and the continuous glass surface above the second floor bookcases.



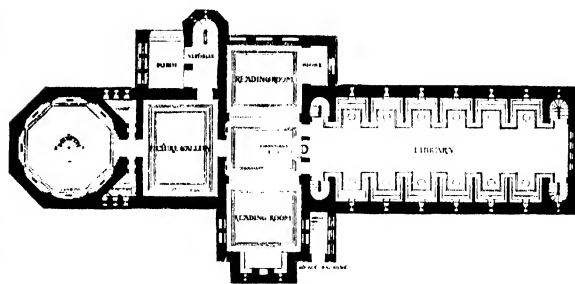


Central Hall, Peabody Library, Baltimore, 1861. Typical of the balcony arrangement with overhead light found in several of the largest libraries of the period, 1840-80. Such a room, though accommodating few readers, gives a delightful air of quiet and bookishness; but would be totally out of place in the modern busy public library which, in large cities, has absorbed practically all public reference functions, on a scale undreamed of a half-century ago.

was closely guarded. Reading tables were set in the alcoves and sometimes in the central hall of the main floor. The vast showing of books was impressive, but there were overwhelming defects. Such were the Boston Athenaeum, 1855, and the Peabody in Baltimore, 1861—two buildings which were widely copied, as at Detroit, 1865, the Mercantile in Philadelphia, 1869, Cincinnati, 1874, the Ridgeway Branch, Philadelphia, 1876, and the Astor Library in New York, 1881.

This staid and rather cumbersome type was outmoded by the sudden advent of H. H. Richardson's Romanesque style that swept the country in the 'eighties, affecting all architecture. Rational planning was sacrificed to the romantically picturesque. It was a period of retrogres-

sion in functional planning; nothing constructive was developed. Woburn in Massachusetts, 1878, and the Howard Library in New Or-



Woburn plan, showing the characteristic wasteful circular reading room, the small windows, the series of alcoves, and the numerous heavy interior walls which prevent subsequent alterations to meet changing requirements.

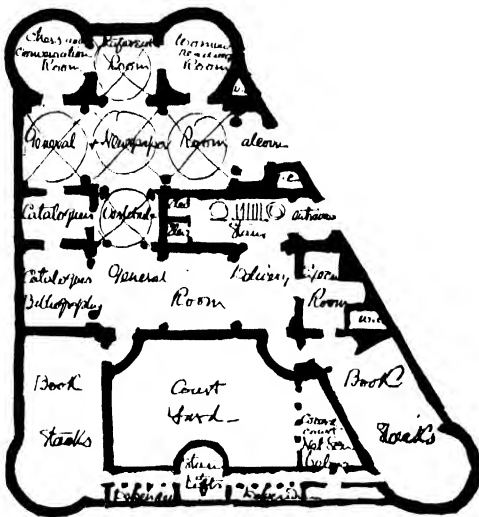
leans are characteristic—heavy, forbidding, poorly lighted, inconvenient.³ They had many imitators.

We must remember that public library use at this time was still confined to a small portion of the population, a somewhat select group, and not the great cross section which uses library books today. Books were still kept in closed stacks and handled by readers under considerable restriction.

³Mrs. Schuyler Van Rensselaer, *Henry Hobson Richardson*. N. Y., 1888, p. 67-69. The New Orleans building was designed by his successors.

Winn Library, Woburn, Mass., 1878. Designed by H. H. Richardson in what he admitted was his "pyrotechnic" period. The influence of architectural display and forbidding masonry at the expense of lighting, convenience, and economy is strikingly evident in a whole series of reactionary buildings which followed.





Richardson's neglect of the requirements of readers and staff, while indulging his fondness for heavy circular construction and design, is well shown by this sketch of some building or idea that fortunately never materialized. The confusion among librarians as to any fundamental principles, added to Richardson's influence, postponed the day of efficient and attractive library buildings for almost a half-century. (Il. from Van Rensselaer.)

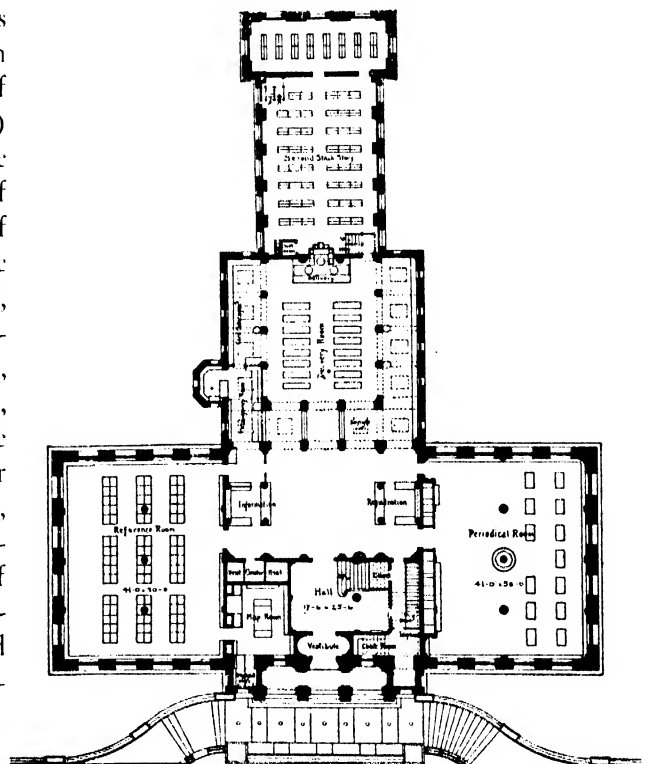
The results of the Richardson program accentuated the revolt of the librarians. Protests against the early impractical types had been heard before, such as Poole's condemnation⁴ of the great hall with galleried alcoves for its (a) waste of space, (b) difficulty in heating, (c) time lost in getting books through the necessity of travelling around a parallelogram instead of radially, (d) damage to bookbindings in the upper tiers through overheating, (e) fire risk, (f) distraction to readers by the visible movement of other readers, attendants, and sightseers, (g) difficulty of enlargement or rearrangement, and (h) excessive cost of construction. Poole suggested the series of rooms about a smaller central "traffic area," as at the Newberry, 1893, which, because it placed subject groups of readers and books together, became the prototype of the subject-departmentalization now in the ascendant. His principles did not go unchallenged by other librarians, but his emphasis on function and convenience gained favor.

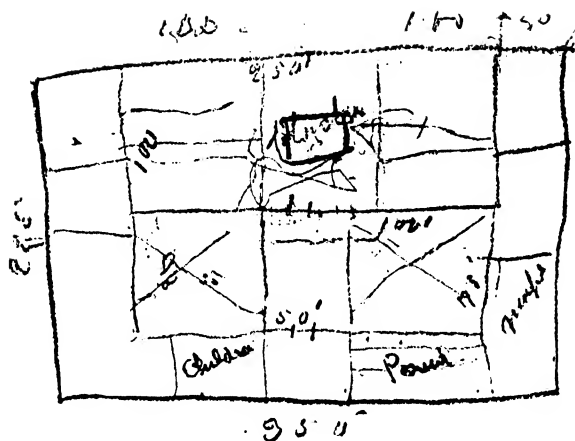
⁴*Am. Arch.*, 10:131-34, Sept. 17, 1881.

These arguments and criticisms over large library buildings on the part of one of the leaders of his day, brought forth a healthy discussion and analytical debate by such men as Justin Winsor, William I. Fletcher, and later by John Cotton Dana, Edward L. Tilton, and many others, which has continued to this day.

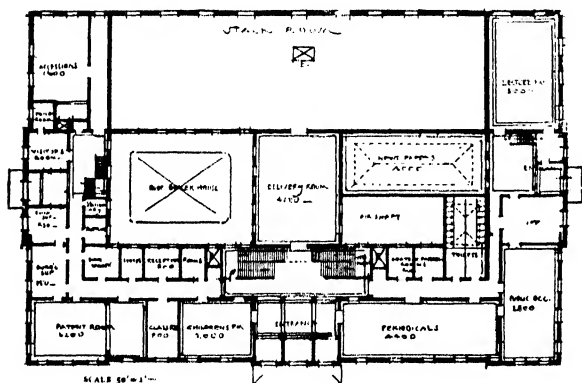
Toward the end of the century there came a distinct advance. The rational planning of the École des Beaux Arts and the classic forms of the Italian Renaissance showed the reaction from the heavy Romanesque. A functional type of plan evolved, with due consideration of what were then thought to be the major purposes, with reading rooms in front and a multi-storied bookstack in the rear, closed to the public who

Providence Public Library, illustrating a step toward functional planning and away from useless, cumbersome structures. Reading rooms in the front of the building, with closed stacks to the rear, were typical of the latter nineteenth and early twentieth century. Some few books were displayed in the reading rooms, but the bulk of the book stock was available to the reader only through use of the catalog and by "call slips" requesting volumes from the stacks. (Lib. Jour., 25:229, May, 1900.)





Facsimile of original sketch for general plan of the New York Public Library, roughly drawn on a card by Dr. Billings in 1897 and followed in the final building plans. (From H. M. Lydenberg, *History of the New York Public Library*, N. Y., 1923, p. 448.)



still chose their reading from a catalog and were served through a delivery desk set between the front reading rooms and the entrance to the stack. The building at Providence, at the turn of the century, is an example.

The type was carried to a high development in the early 1900's. Some of the handsomest of the great libraries belong to this era. The majesty of great monumental architecture, exquisite finish, precious materials, a broad flight of steps at the entrance, or a grand stairway within, one great reading room and a series of carefully proportioned smaller rooms—these are characteristic. Generally the second story became the most important and held the largest reading rooms; stair-climbing was not considered a detriment,

and the bookstack was still kept almost completely closed. St. Louis, Newark, and the later library at San Francisco are typical; New York glorified the third story and placed the catalog and great reference room there, the latter directly over the many-tiered bookstack and served vertically from it.

Boston was somewhat of a departure from type, with the bookstack at the rear and sides of a center court, an Italian palace one is tempted to say, with a library fitted into it, but with such loveliness of proportion and detail that its defects as a functional plan are overlooked.

Detroit has one of the best of the rear-stack plans, and its distinguished exterior is shown in many publications on American architecture. Philadelphia, though built only twelve years ago, is reactionary and belongs to this group.

Just before the World War the library at Portland, Ore., developed the central or tower bookstack with the reading rooms surrounding it, a definite type of plan which persists in favor, for the surrounding reading rooms are close to the books, and readers are next to the outside light. A large portion of the bookstock was displayed on open shelves in these rooms. Richmond follows this plan and improves on it by bringing the main service desk nearer the entrance than at Portland.

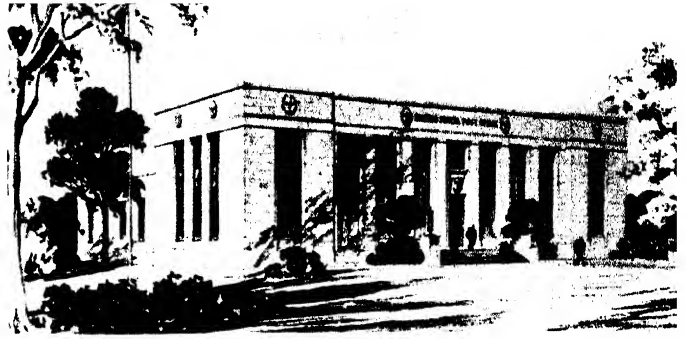
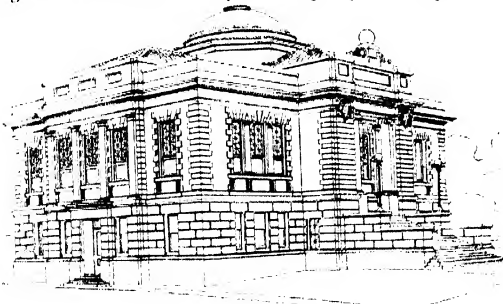
Meantime Cleveland and Los Angeles had been successfully experimenting, in temporary quarters, with "subject-departmentalization." In 1925 Cleveland incorporated this idea in its new building, with the bookstack divided up among the reading rooms according to subject of room and book-material, the building in the form of a hollow square, the reading rooms along the outer walls, the stacks along the inner. So the book and the place where it is read are brought together, and the enormous dominant reading room is eliminated. The first floor, about 200 ft. square, near sidewalk level, is given the importance it deserves. All books are returned here, and some of the most important reading rooms are here; the fatigue of stair-climbing is recognized. This building set a new pattern in its

attention and response to the enlarging demands of the public.

Los Angeles has characteristics both of the center-stack and the Cleveland plans, with no great dominant reading room but subject-departmentalization instead, the books drawn by each reading room from contiguous portions of the stack as in Cleveland. There is a central loan desk in addition. The second floor resumed its place as the most important. The advance beyond Cleveland was in eliminating the waste space of a central court, with the realization that Portland was justified in planning a bookstack with only artificial light.

An entirely new idea in arrangement grew out of the experience of the late Edward L. Tilton, who planned many libraries. His "Open Plan" placed a large proportion of the more used books on open shelves on the main floor, the bookstack with the older books below. These were carried up to the reading rooms when called for. Interior partitions were eliminated where possible. This type was partially developed for the libraries at Springfield and at Somerville, Mass.; at Wilmington, Del.; in the Knight Library at Providence; and it reached its full development at Baltimore, Rochester, and Toledo. When work was resumed in 1937 on the partly constructed Brooklyn Central Library, the rearrangement of departments and spaces followed, as far as conditions permitted, this type of open plan.

Winning competitive design for a Carnegie library, 1902, during the period of pretentious display. Characteristic are the complicated rooflines and domes, elaborate ornament in exterior stonework, classic columns, high basement and consequent long flight of steps.

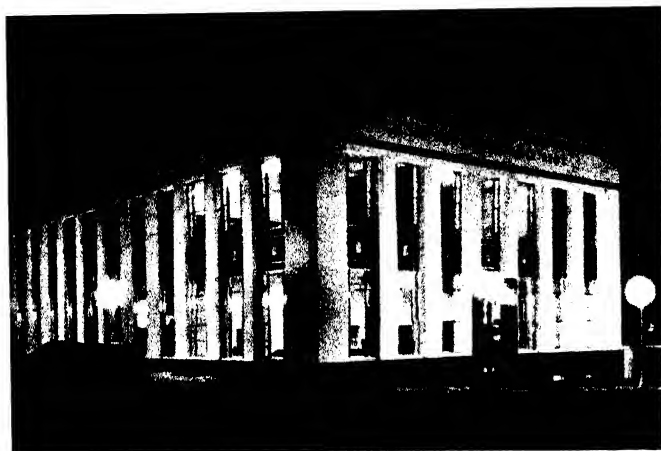


Why should a postoffice be more attractive than a library? Few public libraries are more inviting than the postoffice at Salem, Ore., with its simplicity and beautiful proportions.

During the closing years of the century developments among large libraries were paralleled by a similar movement in the towns and small cities throughout the country. The small library buildings exaggerated the peculiarities of the larger. Each was planned as a group of small rooms dominated by a glorified entrance hall. Toward the last of the century, monumental design was in the ascendant. Columns sprouted in profusion, and it was an impoverished library that failed to boast a stairway in the grand manner, or at least a broad flight of entrance steps. Librarians realized the folly of it all, but their protests were unheeded.

Such was the situation in 1897 when Andrew Carnegie inaugurated his phenomenal program of building grants, two years after he had created the Carnegie Institute, with its library at Pittsburgh. Buildings became a favorite topic for discussion at librarians' meetings. There was a definite desire to have buildings more practical. But the librarians fought against three handicaps: the general tendency, a legacy of the 1890's, toward architectural ornateness; the rapid changes and expansion in the library's services to readers; and the resulting confusion as to purposes and methods, which made it almost impossible for the librarians and even more for the architects to understand the basic relationship and principles.

The period of intense library building activity resulting from the Carnegie grants was characterized by the widespread adoption of separate children's rooms, the opening of the bookshelves to the public, and the desire to separate reference from other adult work and from chil-



Newspaper Building, Ann Arbor, Mich. A business building more attractive, more reflective of its direct functional character than most public library buildings. It would make a better library than most buildings designed for the purpose. Albert Kahn, Inc., architects.

dren's work. Special abilities supplemented by the new library school training meant assignment to special duties. All this led inevitably to special rooms. Buildings were cut up into small box-like children's rooms, reference rooms, magazine rooms, catalog rooms—expensive, hard to supervise, and impossible to modify as time passed. Meantime the library seemed the exponent of the community's ambitions for architectural grandeur.

It was a natural outcome and a joyous relief when Mr. James Bertram, later secretary of the Carnegie Corporation, and the one who made the majority of contacts between the libraries and the Carnegie offices, cleared the air by publishing the best library opinion in the form of a simple memorandum of suggestions in 1911.⁵

This decried architectural elaboration, pointed out a few principles, and in later editions offered some rather simple outline sketches, all of which led to a more open, more flexible, less expensive structure. It left every community in perfect freedom as before to plan its own library interior as it liked within these few reasonable bounds, and to design its exterior as it pleased if it kept away from expensive columns, portals, stairways, and domes.

The effect was enormous. Large open reading and circulation rooms became the general rule, separated when necessary only by glass screens or even low bookcases; restrictions that kept readers from their books were further modified; the turnstile and the radial stack dis-

appeared; architects and librarians more and more studied the requirements of the service itself, and exterior design fortunately simplified itself in harmony with the general architectural ideas of the present century.

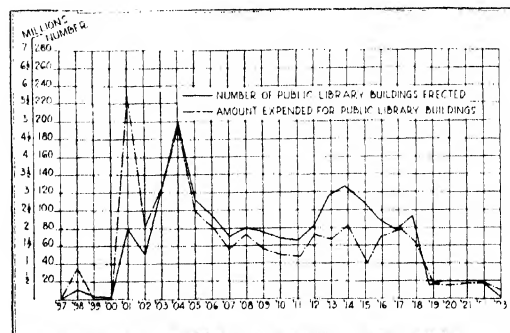
In 1918 the Carnegie Corporation announced its decision to give no more public library buildings in the United States because their need and usefulness had already been demonstrated to the nation. There was consternation for a time. But it was a wise decision with healthy results. Towns and cities now realize and meet their own needs from their own public funds. Local initiative has discovered new solutions of the building problem, with fresh ideas, greater freedom of architectural expression, and greater convenience to readers.

The rise and completion of the Carnegie building program from 1897-1917 and the extent to which it influenced the whole library movement form a vital chapter in American library history which cannot be covered here, but is at least suggested by the following graph of Carnegie gifts for public library buildings.⁶

⁵Carnegie Corporation of New York, *Notes on Library Building*, undated, 1p. Two undated revisions of this, with diagrams, appeared in 1914-16, and a supplementary sheet in 1919. These are quoted and analyzed in Ch. 23. See also *Lib. Jour.*, 40:243-47, Apr., 1914.

⁶W. S. Learned, *American Public Library and the Diffusion of Knowledge*. N. Y., 1924.

*Public library buildings given by Andrew Carnegie or the Carnegie Corporation, 1897 to 1923. Approximately nineteen hundred were erected in the United States and Canada. (Redrawn from W. S. Learned, *The American Public Library and the Diffusion of Knowledge*. New York, 1924, p. 83.)*





Most refreshing is this departure from the conventional ideas of a library building. Extensive window space, simplicity of line, characterize the \$250,000 136th Street addition to the 135th Street Branch of the New York Public Library. Louis Allen Abramson, architect. Soibelman photo. From a drawing; building not yet constructed.

Andrew Carnegie's conception of the library as a community center prompted provision for a swimming pool, auditorium, and other leisure-time activities in the first American library building given by him, at Allegheny, Pa.⁷ The ideas of this great donor naturally had a profound effect, and most Carnegie buildings were provided with an auditorium at least. Librarians

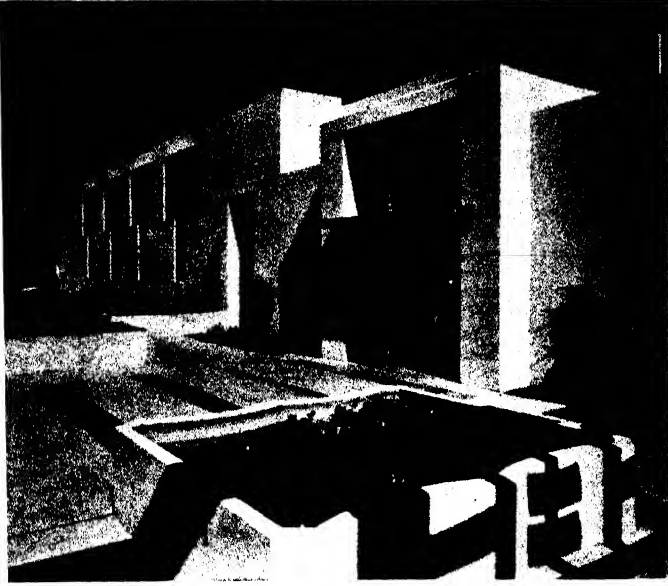
soon found by bitter experience that such extraneous activities interfered with the real book service for which budgets were always too meager. Judson T. Jennings' advice to librarians at Saratoga, 1924, "Stick to your last," well expresses the attitude of most modern librarians to extra-library activities whose housing and direction have increasingly been taken over by public schools and welfare groups.⁸

⁷Authority for this statement is taken from Andrew Carnegie, *Autobiography*, N. Y., 1920, p. 259; *Lib. Jour.*, 14:163, 165, May, 1889; Mrs. G. M. Drury, ed., *The Library and Its Home*, N. Y., 1933, p. 102. The Carnegie libraries at Braddock, Homestead, and Duquesne were library rooms, parts of community social centers.

⁸New temptations or opportunities, such as aspects of so-called "Adult Education," have sprung up, as discussed in Ch. 22.

CHANGING PURPOSES

The foregoing hasty summary of library evolution indicates that the functions of the public library as conceived by both readers and librarians have been constantly changing since its first creation as a free, tax-supported institution



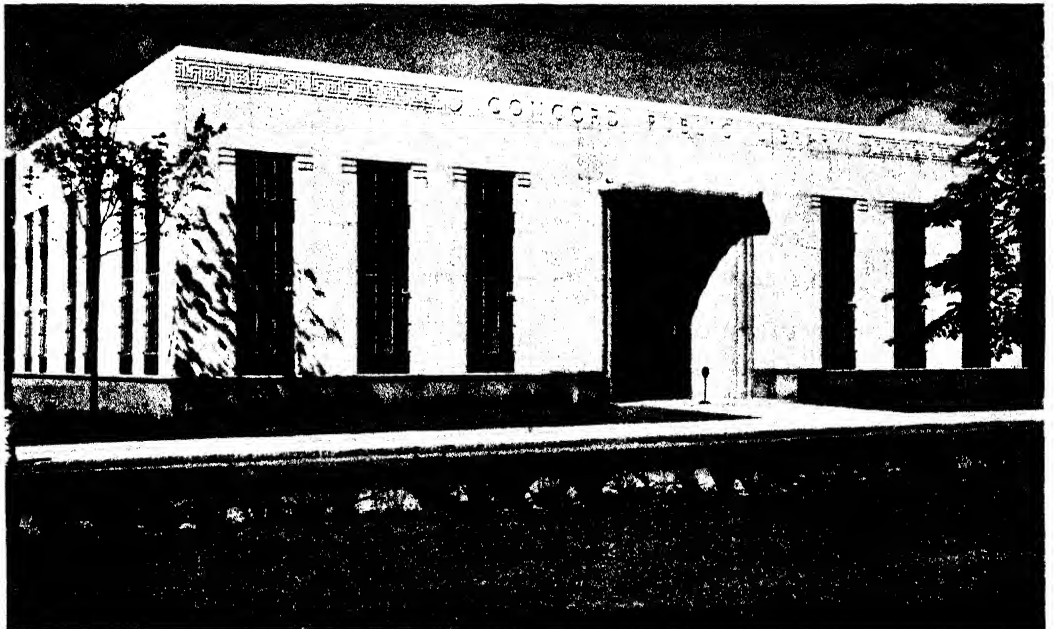
Redwood City, Cal., has a building designed in the modern manner, easily entered, well lighted. Avoids all ornament that is not functional and relies for its interest on variety in mass and outline and such details as the entrance hood. Plan in Ch. 24. James H. Mitchell, architect. 1939. Esther Born, photo.

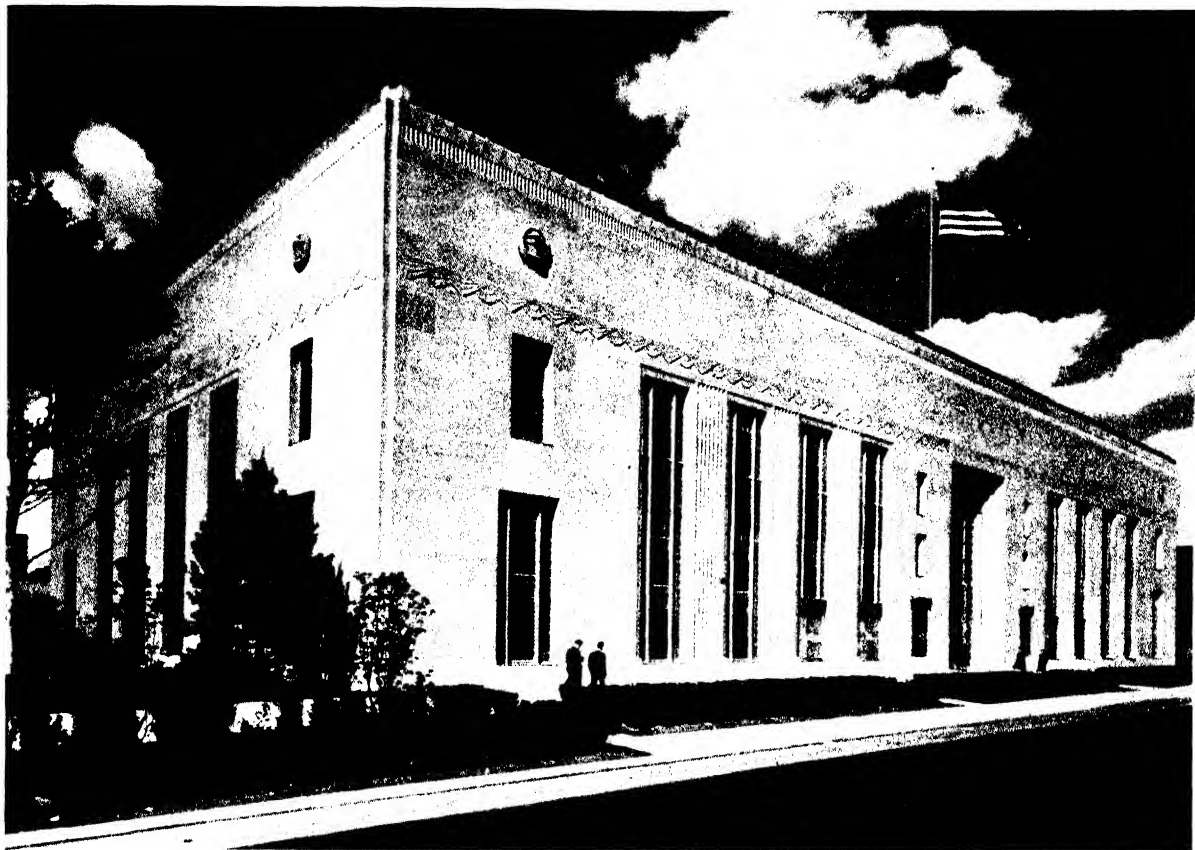
a century ago. They will continue to change and perhaps more rapidly henceforth. Occasionally some librarian takes account of the situation and

helps us see that we have moved ahead in accomplishing our primary library purpose, so well summarized in the sixty-year-old motto of the American Library Association: "The best books, for the greatest number, at the least cost," which briefly interpreted means: (a) books; (b) people using them; (c) the work of bringing books and people together most effectively and economically.

So complicated is the task of providing to the best advantage for these three basic elements in the public library's purpose that each new building is a fascinating problem calling for all possible study and weighing of points. Within even a few years how many viewpoints have changed! What a transformation between the old purpose of keeping the book collection safe and in good order, and the present "open shelf" idea which characterizes practically every library building of the twentieth century! The transfer of emphasis has in general been from

Concord Public Library, Concord, N. H. Designed in the modern manner, retaining classic principles of composition, but avoiding columns, pilasters or cornices. White Concord granite; base and doorjambs of a darker polished granite; white bronze doorway, steel window-sash. A. M. Githens and Francis Keally, associated with Lyford and Magenau, architects. 1940.





Toledo Public Library. Of Indiana limestone with aluminum trim at windows. Central six windows equipped for exhibits. To insure the effect of planting along the base, the building and the main sidewalk are set back, with shrubbery between the sidewalk proper and a cemented strip along the curb for convenience in parking. Entrance at sidewalk level. 244 x 160 ft. Hahn and Hayes, architects. 1940.

BOOKS TO PEOPLE, and of late years from the handing out of recreational books to the highly intelligent "servicing" of the vital information that the American people desire from books.

Mechanical progress, too, has greatly altered library plans. William F. Poole, one of the leaders among librarians, when criticizing the plans for the projected Boston Public Library in the 1890's prophesied with dark foreboding about the bookstacks: "Stacks will rely wholly for light on electricity. They will be without a ray of natural light." Bookstacks have ever since been built with less and less natural light and have gone up tier after tier above the earth, as at Yale, and down tier after tier below the earth, as at Minnesota. Because of progress in electric lighting, waterproofing, ventilating, and air

conditioning, the experts of today encourage us in new arrangements that would formerly have seemed fantastic.

Who can foresee the next steps? Intensive book use has multiplied far beyond the predictions of even ten years ago. The public library and the popular use of books for information and culture may grow even more rapidly than they have been growing during the last generation; they may take a place as yet unforeseen in the intellectual and civic life of the community.

THE FUTURE LIBRARY BUILDING

The library buildings of the future must be a total departure from the buildings of the past. With few exceptions they have given the people of America the false impression that libraries

are aloof, unaware of what is going on in the world, unresponsive to current problems and demands. Their buildings have been palaces for the learned, pretentious, withdrawn, dull, self-sufficient, making no appeal to the average passerby to come inside. Compared with the banks, the post offices, even the stores of today, most libraries are totally eclipsed in their architectural appeal to the people.

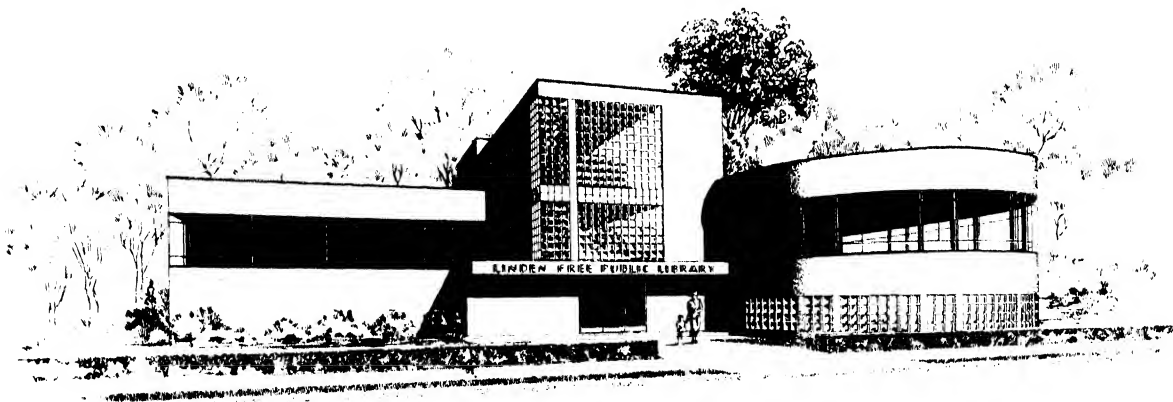
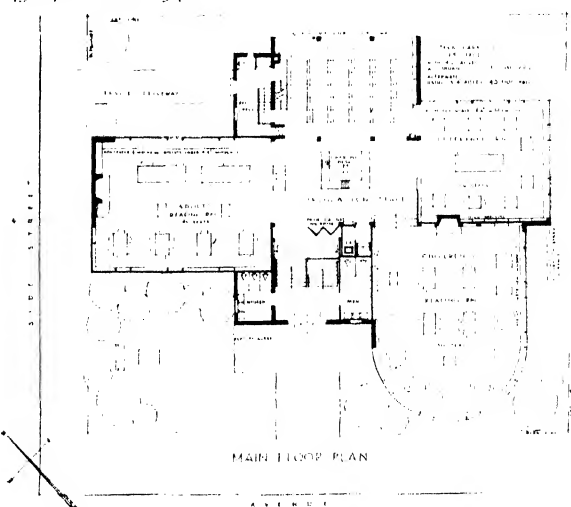
That this dissatisfaction with past and present library buildings is shared by English librarians and architects is evident from their current periodical articles. Mr. E. J. Carter, A.R.I.B.A., architect and Librarian of the Royal Institute of British Architects, puts it bluntly:

"My harsh . . . opinion of English library design has been revealed consistently in my *Year's Work* chapters for the past seven years. . . . The present dreariness . . . is part of a communal deadness. The corpse will revive when a few architects and librarians start conspiring to produce a real library which will wake up people . . . to the exciting humanity of a good architecture for their service."⁹

The new generation of librarians and archi-

tecs must rise up with a mighty resolution to crush this evil tradition in design, this false attempt at a heavy dignity and copying of outworn patterns, and produce new libraries which will be the liveliest and most inviting buildings in their communities, full of color, action, and interest, where all will delight to come, and yet where the student who seeks quiet will find it thoughtfully provided.

⁹*Lib. Assoc. Rec.*, v. 42:66, Feb. 1940; also *Library World*, 43:84-86, Dec. 1940.



Competitive design for Linden, N. J., awarded first place but unfortunately not carried out. Careful study of the requirements characterizes the plan, and this is reflected in the composition of the exterior, especially in the placing and extent of the windows, including use of structural glass. The plan should provide a workroom on the main floor close to the charging desk instead of relegating all work space to an upper floor. Compare disposition of the plan with the radial plans in Ch. 26. O'Hara & Edson, and Andre Halasz, architects. 1936.

CHAPTER 2: GENERALLY ACCEPTED PRINCIPLES OF LIBRARY PLANNING

CERTAIN principles of library planning have been demonstrated by the success and the failure of library buildings to meet modern library needs. These principles have been pointed out, one after another, in debates at the A.L.A. conventions and in articles published by librarians. Two notable summaries have appeared, by the late C. C. Soule¹ and by William F. Yust.² Other experienced men such as W. R. Eastman,³ A. E. Bostwick,⁴ and E. L. Tilton⁵ assisted in formulating them.

THIRTY-THREE POINTS

These principles are not presented as merely personal tenets of the authors. They are generally accepted and we believe may be regarded as axiomatic.

1. A satisfactory library building can be evolved only through long, careful, joint study on the part of the architect, the librarian, and the building committee of the Library Board.
2. Proposals to give any community a new public library building without expense offer an opportunity and an obligation for the Library Board to discuss with the donor the site, plan and design, and with the tax appropriating body the necessity of adequate support.
3. Too heavy an investment in building costs in proportion to population or to annual library appropriations may result in inadequate financing for the library service, for too much may be required for heat, light and upkeep.
4. In small communities and in branch neigh-

¹*Lib. Jour.*, 16:17-19, Dec., 1891, later revised as C. C. Soule, *Library Rooms and Buildings*. Boston, 1902. 12p.

²*Lib. Jour.*, 51:901-04, Oct. 15, 1926. Later revised as "Don'ts in library planning," in *N. Y. Libs.*, 11:163-66, Feb., 1929.

³W. R. Eastman, *The Library Building*. 2d ed. Chic., 1918.

⁴A. E. Bostwick, "The librarian's idea of library design," *Arch. Forum*, 47:507-12, Dec., 1927.

⁵E. L. Tilton, "Library planning," *Arch. Forum*, 47:497-506, Dec., 1927.

borhoods, the advantages and disadvantages of temporary and rented quarters should be studied and compared with those of a permanent building. In small communities a special or permanent building is not always necessary for successful library work.

5. One should be prepared to resist all ill-considered ideas on the part of self-seeking or misguided individuals or groups, even if urged by the press, by prominent citizens, or by politicians.
6. Many errors may be prevented by the appointment at an early date of a competent trained librarian, if the library does not have one.
7. If a local architect inexperienced in library planning is appointed, directly or by competition, someone familiar with library planning must be retained, either a librarian as adviser or a consulting architect, and his services utilized from the beginning of the project until its completion.

8. The location of the library should attract and serve the greatest possible number of people.

9. The building should be planned and designed to be appropriate and adequate for the special type of library work to be done and the community to be served.
10. Each library should profit from the ideas, plans, and experience of other communities and libraries, but to get best results should not copy blindly.
11. The planning of the interior of the building as to important rooms and their relationship and arrangement is necessary before the exterior is designed. Arrangement is discussed in Ch. 33.

12. Beginning with the early stages of the planning, the architect should study the recommendations of the librarian and a committee of the staff, as to proper placement of all service desks, catalogs, furniture and equipment. These should form an integral part of the planning of

each room, and thus avoid either the appearance or the consequences of being an afterthought.

13. Convenience and beauty are common goals; time should be taken to attain both. "Architecture is of all the arts the one most continually before our eyes."

14. Provide for growth and change, and the flexible arrangement that will insure them.

15. Fireproof construction should be considered, but in a small library its cost may not be justified.

16. Noise-reduction through the use of acoustic materials is advisable.

17. Challenge all proposals to house a museum, art gallery, public auditorium, or any other non-library community activity in the library building.

18. Features that attract sight-seers should not be placed in the reading rooms. Space should not be taken up by halls, rotundas, domes, great stairways or other features that do not contribute to the purpose of the library.

19. The community should be attracted to the building by an inviting exterior in which the window area is in generous proportion, and by a sidewalk level entrance, exterior and interior exhibits of books and the sight of books visible from the entrance.

20. The interior should be arranged economically, *i.e.*, simply, as to expense of structure and saving in travel.

21. The rooms, their proximity, their equipment, and their communication should be arranged to provide the most complete supervision with fewest possible attendants.

22. Provide adequate work-space for the public service staff in proximity to the major portion of their respective tasks, and if possible where they may unobtrusively supervise the readers and be quickly at their service.

23. Adequate quarters should be provided, furnished and equipped for the comfort and convenience of the staff.

24. Except in large libraries, the trustees' and librarian's room may be combined.

25. An adequate Children's Room should be

provided, and perhaps a separate entrance for children.

26. The needs of "intermediates," or high school students, of the great 14 to 20-year-old group, who no longer wish to be treated as children, should be recognized, by giving them special quarters or space for (a) leisure reading and (b) school reference work, with adult books available, but without disturbing adult readers.

27. It is necessary to have open shelving for as large a proportion as possible of "live" books and periodicals, both adult and juvenile, making them easily accessible to readers.

28. Considerable additional shelving should be arranged for stocks of less-used material, "retired" books, and material in process of preparation, or waiting for possible use.

29. Older, less-used books should be continually relegated from open shelves to closed shelves as essential to economy, and to meet changing public demands. Stacks and shelving, even more than the general plan and structure, must provide for the possibility of frequent shifts.

30. In libraries in communities large enough to require storage stacks of considerable capacity and several levels, they should be located to give (a) quick access by the staff and prompt delivery of books to readers on request, (b) the least obstacle to and interference with readers in their use of and access to the most frequented rooms.

31. Developments in book elevators and carriers have made multi-level storage stacks acceptable, while developments in lighting and ventilation have made acceptable interior stacks which have no outside outlets or daylight.

32. There should be as much regulated natural light as possible in all reading rooms and work rooms, with windows extending to the ceiling.

33. A library building should be the best lighted of all public buildings. Interior artificial lighting should be scientifically planned to combine unobtrusive beauty of fixtures with a minimum of glare from direct light, and a maximum of diffused light (including the lighting of reading room and work room corners).

CHAPTER 3: DEVELOPING A PROGRAM: THE TRUSTEES' DUTIES AND PROCEDURE

PAST experience shows that full responsibility for initiating a building project, organizing it, and finding ways and means to carry it through must be assumed by the library board. Trusteeship of land and building and therefore the authority to make final decisions and to award contracts may lie with city officials or other groups over whom the board has no legal control; but it is the board which must take the lead and guide public opinion courageously, honestly, smoothly, and with dispatch, not timidly feeling its way, or waiting for pressure, or making concessions against the library's best interest.

BOARD RESPONSIBILITY

The powers of the library board itself must be definitely understood. Where do the various responsibilities lie? In the city or town officials, and in which of them? In the library trustees, if there are such? In the board of education?

Who is responsible for the choice of the site, for the size, character, and general cost of the building, for the selection of the architect and advisory librarian or consulting architect, or both? Who has the power to approve or accept the plans and specifications for the building and for its furniture and equipment? Who awards the contracts? Who makes the payments to the architect and contractors and for all the miscellaneous items up to the completion of the building? Who holds title to the land before and after completion and to the building itself? Is a contract necessary between the library and other officials for operating the completed library building? Can the board defeat any attempt to force on the library an outside appointment or to control details of its building or the personnel of its service staff?

These matters must be clearly understood at the beginning, or complications will result; such

complications are not at all unusual. Executive powers differ in different communities. The plans for two library buildings near New York City were authorized by their respective library boards, though in both cases the boards later found they had no authority to do so. In one case this was discovered when the final plans were completed and out for estimate. Fortunately the mayor and council endorsed what the board had done, so the project was carried on. But here danger lies.

The board usually places the duties of the building project in the hands of a special building committee, enumerating its powers in the resolution appointing it.

Needless to say, the public will be influenced by the personnel of the various committees and especially by the choice of chairman. It is wise to see that these persons are not only able and effective but of a type to win public approval.

If the library board or the building committee is to handle actual money, it must be organized and legally authorized to do so; possibly the chairman or treasurer must be bonded. It must keep proper records, carry on correspondence, and transact matters in a legal and systematic way. In many cases, however, contracts, expenditures, and payments for library buildings financed from public funds are handled by regular city officials as for other municipal buildings and are safeguarded through certain restrictions and procedures unfamiliar to the board. Many legal difficulties may thus arise. The important point is that where others have the power to act, the library board, or trustees, or building committee, should keep them informed of the proper course to follow and not wait passively until they make some mistake.

A site may have been secured, or the gift of a site may be imminent. Unless it meets the conditions suggested in Ch. 6, it may be wise



Jones Library, Amherst, Mass. This memorial building, a gift, could be planned, designed and constructed without the usual restrictions of municipal financing and control. It is a successful attempt to design for a cultured residential community a building totally without a formal or an institutional character. One approaches it with more than ordinary expectation and uses it with a sense of gracious surroundings. A collection of 20,000 volumes circulates 100,000 annually, in a community of about 7,300. Cost of building \$260,000, \$100,000 for furniture and equipment. Putnam and Cox, architects. 1928.

to consider an exchange of sites, or sale and repurchase, in order that the investment in the building and all future annual appropriations for service shall not be partially lost by a poor location. This point cannot be too strongly emphasized; a site other than that easily reached by a main thoroughfare should not be accepted, even if given or available at a bargain. The acquisition of a suitable site in the face of difficulties and criticism will show the real ability and quality of the board. It may cost half as much as the building.

The board will guard against embarrassing commitments. A well-intentioned donor may make ill-judged restrictions "as nicely calculated to harass, postpone or actually defeat the desired end as if an enemy had planned the bequest and written the will." (J. I. Wyer)

Trustees who fail to straighten out such difficulties, or accept gifts which doubtless will be ineffective in future, or who hesitate to compel municipal authorities to make adequate appropriations as a condition of the acceptance of a gift, are hardly fulfilling the trust imposed in them.

In any case, each member of the board must

understand that his strength is as a member, and that he has no power of his own but only through or in behalf of the board as a whole. He should avoid publicly expressing an opinion, initiating plans and ideas, or committing the board in any way without first having taken it into his confidence and having its whole-hearted support.

The board must utilize competent advice. Surveys by the state library commission or a similar unit, or by a librarian with recognized knowledge and judgment as to the various factors of planning, may be combined with consultation on other features of the local program, such as the organizing of committees, choosing citizens who can help on financing, developing public opinion (if a popular vote is necessary), anticipating legal points, and getting an approximate idea of the size, cost, and arrangement of the building, or even, as in a case in Massachusetts, having a building bequest made conditional upon the project being handled under the supervision of the State Library Commission. This would lead up to the choice of architect and procedure on plans, bids, and contracts.

THE LIBRARIAN

The larger the city the more vital it becomes to appoint an experienced, trained librarian at once. In large communities only such a person, trained to handle responsibility, working continually to foresee the library services and prepare for them, can be in a position to anticipate questions arising from every source and bring them to the attention of the board and through it to the proper officials, the architect, and contractors. The librarian is the guide and correlator of plans, discussions, and studies, and should participate in all the stages of the project.

THE NEED FOR A BUILDING

The first question in a program is to determine how pressing and exactly what is the need for library service.¹ The wisdom of seeking a permanent, separate building depends upon whether sufficient money will be left to buy books and employ a competent, trained librarian and staff, after the annual cost of operating the building, including repairs and janitor's salary, has been deducted from the total library budget. At least \$1.00 per capita will be required as called for by A.L.A. Standards, an amount much smaller, for example, than the national per capita *tax* alone on liquor consumed! It may be advisable for special reasons in small communities to carry on temporarily in free or rented quarters if they are appropriate to develop the effective service to which the community is entitled. Cleveland, Rochester, Milwaukee, Los Angeles and others in past years have built or rented numerous, inexpensive, "store-type" buildings to cover branch needs; later these can be sold or rerented. See Ch. 36 for arguments against this course.

It is generally agreed that the typical town of over five thousand people should have a mod-

ern local library service, properly housed and financed, either as an independent unit or as an agency of a larger county or regional library. Though the immediate demand may not be organized or vociferous it has been demonstrated that library housing and location can stimulate or decrease existing library service very markedly.

"Don't build" is assuredly not the wise decision in cases where uncertainties about the real need of a building, the suitable type, the proper location, or the ability of the community to pay for and maintain it properly, are taken by the trustees as an excuse for inaction. A building, obviously, will stimulate better library support if the trustees capitalize its public appeal. This does not mean that every small village needs a building. Clara F. Baldwin, Director of Libraries, Minnesota Department of Education, says: "An average town of less than two thousand cannot or does not maintain an adequate library. Small Carnegie buildings costing from \$5,000 to \$10,000 and requiring only ten per cent annual support, compared to building cost, have often proved a liability rather than a help. The building itself eats up all the income, leaving nothing for books." In the small town it has been frequently found that the janitor's salary exceeds the librarian's, and after the first two or three years repairs and redecorations make large demands on the budget.

This principle applies less sharply in larger communities, and the disadvantages of rented quarters should be kept in mind. On the other hand many larger communities embark on too elaborate projects. "At X a too costly library was built. It seemed impossible to keep building operation below 25% of total annual expenditures." A disheartening prospect for the librarian and readers!

As to proper size and cost, certain standard "measuring sticks" may be applied, such as are given in Chapters 5 and 11.

OPERATING COSTS FORESEEN

When a new building is completed there must

¹For an excellent typical statement of local needs, financial problems and program, see the 11 p. mimeographed report: *The Public Library's space problem and proposed building program*. Oakland, Cal. Public Library, 1939. Also a typed Report of program, East Branch, Akron, Ohio. 1939. This includes plans, correspondences, publicity, specifications, contracts, photographs.

be adequate funds for its operation.² The board must see that proper appropriations are assured.

Recent years have shown the importance of placing on the public at large the responsibility for library support through regular taxation, like that for public schools. As the new building will be larger than the old, its annual budget must be greater; with better heating, its fuel bills higher; with better lighting, electric book-lifts, and perhaps an oil-burning system, its electric bills higher; with a larger staff, its salary-list higher; and in every way cost increases with better service. This is obvious yet apt to be forgotten, particularly in case of a building paid for through private funds. When it is realized by the donor, he is generally willing to cooperate in setting up provision for it, or to make his gift conditional on adequate public support.

ORGANIZING PUBLIC OPINION

Few libraries can finance and undertake a building program without organizing public sentiment to approve the expenditure of public funds. This is appropriate and in the long run the soundest basis for permanent library operation. Generally it is best initiated by carefully reporting actions of the board in newspapers as news. Not always. Often the news method is not sufficient. The details of campaign and publicity in thirty-one public campaigns are described in "The Library and the Community."³ Ten of these campaigns are directly concerned with buildings.

Certain groups and individuals who have an "axe to grind" will not approach library officials directly but will organize embarrassing pressure, against the public good; and in every community there are certain citizens with no real knowledge or experience, who are full of opinions as to what is the most economical, appropriate, and otherwise good procedure. It is fortunate if such persons do not have political or newspaper support in promoting ideas detrimental to the best interests of the library project. A real estate group may promote the purchase of an unsuitable site for the library.

Considerable pressure of this sort is almost certain. It must be firmly resisted and where possible forestalled through the library's own publicity. The issue should be defined in black and white, reduced to figures if it involves public expense, and tested as to possible effect on public opinion.

If the project is to be determined by public vote, the board should learn some months before election whether any competing tax loan is to be submitted with it. "Shall the library proposal stand alone on the ballot; shall it be considered at an election when other proposals are also up and each proposal may be voted on separately; should the library join with other projects involving a lump sum bond issue for all or none? No rule is universally applicable. The backers of certain undesirable or unpopular projects may attempt to insist on arrangements that will make the popularity of the library carry them also, this combination assuring defeat for the library. The best advice is to be sure of one's ground legally and avoid entangling alliances. The advice not to announce a specific site in advance of the bond issue election, must be subject to local conditions." (John B. Kaiser, letter.)

GATHERING IDEAS

From the start, architects, librarians, and trustees will be making continuous studies and trying to draw ideas from every possible source until the building is finally completed. They will not hesitate to copy good ideas, but will challenge the soundness of these ideas as applied to the local problem.

TIME ELEMENT

The larger the city and the building project, the more time is required to bring it to a conclusion. Trustees, library staff, and readers are surprised and disappointed by the long period which sometimes elapses due to legal, financial

²See Ch. 7, as to operating costs.

³J. L. Wheeler, *The Library and the Community*. Chic., 1924. Chs. 29, 30 and Appendix.

and other unexpected delays. In any important building project, a year may well be devoted to study, conferences and planning after the funds are available, site assured and architect chosen, before the construction begins. A more nearly typical project was that at Richmond, Va.:

- 1926-Sept. Funds granted, which with accumulated interest amounted to \$540,000 before completion.
- 1927-Nov. Site chosen and architects appointed.
- 1928-Aug. Final plans approved and site clearance begun.
- 1929-Jan. 9 General contract awarded.
Jan. 15 Excavation begun.
June 22 Cornerstone laid.
- 1930-July Building opened to public.
Dec. 15 All details completed, inspected, and building dedicated.

Some large city building projects have extended four or five years, even longer. As the chronological steps in the Enoch Pratt Library project suggest difficulties seldom expected but doubtless typical, a mimeographed recital of developments has been prepared for anyone who may request a copy.

FINANCING

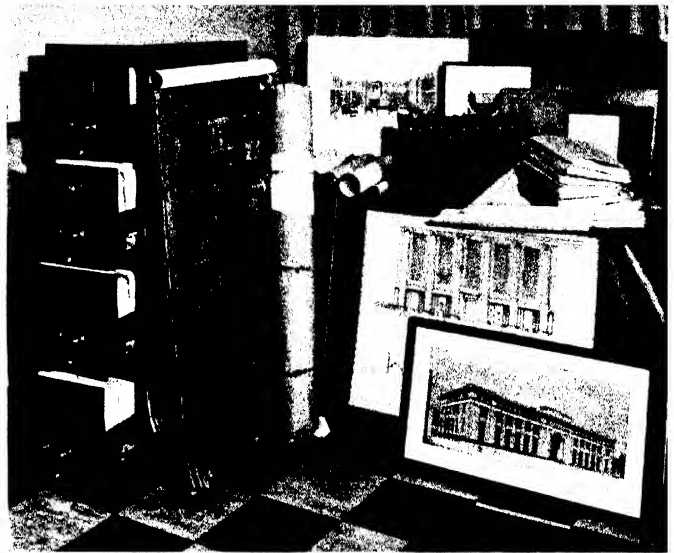
"During the pre-war years the Carnegie Corporation's donations were figured on a basis of \$2.00 per capita, but with the increased costs of construction, \$3.00 scarcely suffices, except for the simplest types," said E. L. Tilton in 1927.⁴ Ch. 4 proves that even this is totally inadequate for smaller buildings.

Library buildings may be financed by gifts of individuals, by grants from the federal, state, county, or local governments, or by any combination of these elements. Individual gifts include outright gifts or bequests from citizens with or without restrictions. In some cases, no-

⁴E. L. Tilton, "Library planning," *Arch. Forum*, 47:498, Dec., 1927.

⁵S. E. Leland, "The financing of library construction through bond issues," *Lib. Jour.*, 55:49-55, Jan. 15, 1930.

⁶Paul Studensky, *Public Borrowing*. N. Y., 1930. p. 135.



Library planning is not a brief or hasty process. At Baltimore unexpected legal delays meant four years of constant change and development, 25 successive sets of preliminary floor plans, 24 exterior designs discarded, almost daily departmental or staff group conferences, reduced to memoranda form, 3½ filing trays full. Over 100 members of the staff participated in the planning. The bound volumes contain the complete successive sets of furniture designs and specifications.

tably with the Carnegie grants, which have not been made since 1917, gifts have been made with the condition that the local government raise or contribute some proportion of the cost of maintenance. Individual gifts may result from the private solicitation of individuals or from a widespread publicity and fund-raising campaign.

In the past, financing by the taxpayer has usually meant issuing bonds; today, in theory if not in practice, the trend is toward pay-as-you-go. Students of municipal government predict that the recent practice of voting heavy loans for municipal improvements and paying them off with accrued interest over a period of years will give place to the sounder method of levying an additional current tax over a period of years and placing the proceeds at interest, which will bring in, instead of paying out, money for the community.⁵ Paul Studensky thinks that "both loans and current revenues should be used in the financing of permanent improvements."⁶

Two kinds of municipal bonds are found in library building financing; sinking fund bonds and serial bonds. Sinking fund bonds bear annual interest and mature at one future date, pre-

sumably within the effective life of the public improvement. A portion of the annual tax revenue is set aside to repay the bonds at maturity. Serial bonds, on the other hand, are issued with differing maturity dates over a period of years, a fraction to be retired each year. Most municipalities have now adopted the serial method of financing public improvements.⁷

Pay-as-you-go plans mean either increasing the tax levy for one year to pay for a permanent improvement such as a branch library, or creating a fund to be set aside at interest by increasing the tax levy for a period of years. The second type is like a sinking fund in reverse and may be subject to the political manipulation and other evils of sinking funds. Appropriations from the annual operating budget of the community for the library building prompt the question again: will there be annual support for operating? The pay-as-you-go method was followed in Chicago, Berkeley, Cal., Bridgeport, Conn., and Toledo, but space does not permit reciting the interesting details.

A recent development in library building financing has been the use of federal grants administered through the Public Works Administration. The grants have been for only a portion of the expense, at first 30% and later 45% of the total estimated cost of the locally sponsored project.⁸ In many cases the grants are supplemented by municipal loans, retired over a period of years. State and county grants are usually made on a similar basis.

COMBINING

Combinations with other community enterprises give rise to various problems, as discussed in Ch. 22. At Solano County, California, funds were voted for a new building to combine the housing of all county offices and the county library. (See Ch. 35 for account.) A plan was developed at a considerable saving in original building cost and maintenance; *e.g.*, one heating plant and one cleaning staff suffice. Library needs were treated as a problem complete in themselves, not overlooking convenient entrance

and exit to and from the library and its various rooms. The library, naturally, occupied space on the main floor level. If it had been relegated upstairs the results for the library and its service would have been too unfortunate to cite here as a good example.

At Oberlin, Ohio, years ago the college and public library combined in a building on the edge of the campus. This idea appears to have merit, although we know of no other example until in 1938 Chattanooga placed under one roof the collections and the organization of the Chattanooga University Library and Chattanooga Public Library. The building was erected with the aid of a PWA grant. The two libraries were not combined, but their collections are used in common, with certain restrictions.

CASES

At Trenton, the Frank O. Briggs branch was incorporated in the wing of a new Central High School (1932), a combination that only in rare instances has worked out satisfactorily. See Ch. 36 for discussion of issues involved, and plan.

In Youngstown, Ohio, the public tax-supported library is owned and operated by an incorporated body. In 1924, when it projected a program of branch library building, part of the fund for the largest of four branches was raised by public subscription, library officials believing that these activities would lead citizens in three other sections to demand from the city the smaller amounts they would need. This surmise was justified by events. A public vote not being required, the city council issued bonds for erecting branches in two sections, and sentiment was sufficient later to cause the city to issue bonds for the balance of the cost for the larger building in the first section. In each case, these and subsequent branch buildings having been created wholly or partly out of public funds, the

⁷W. L. Raymond, *State and Municipal Bonds*. Boston, 1923. p. 302.

⁸Works Progress Administration, *Report on Progress of the Works Program*. Washington, March, 1937. pp. 84-85.

titles were vested in the city and not in the board of library trustees. The library operates them under 99-year leases.

The central building at Evansville, Ind., erected in 1931, "eats up in interest and bond payments approximately \$25,000 a year, *i.e.*, about one fourth of our income—almost a major disaster." It is not usual to charge bond payments against annual library operating expense; they are usually paid out of general sinking funds, together with the liquidation of other city improvement debts.

LEGAL POINTS

Some of the multitude of legal problems facing any board of trustees when launching a building project have been intimated, especially those dealing with relationships between the library board and other public boards and officials. In about half the cities of over 30,000 population, final powers in erection of buildings are vested in the city council rather than the library board.⁹ The latter may be given authority to make plans and negotiate contracts in a preliminary way, but final decisions rest with the council. In other cities it may be some public improvement commission or similar body. In some cities the citizens can vote on a library bond issue, and the conduct of the legal and fiscal aspects of the project will remain in the hands of the regular municipal officers. All these questions of authority and responsibility should be anticipated.

Any necessary statutes and ordinances to create new powers must be drafted and passed, and this consumes a long period.¹⁰ Such powers are given by general statutes in many states. Cincinnati voted a bond issue authorizing the construction of a central building. When it came time to prepare the bonds the law under which

the library operated and under which the bond issue was initiated was held to be unconstitutional.¹¹ As a result the bonds were not issued, and the project had to be postponed. In several states the law provides that any duly incorporated library board even if partly financed by private or endowment funds may, if giving free public service, have tax appropriations granted to it by the municipality without any new state legislative authority; this may or may not include capital outlays for building. A careful study of the state's library laws¹² and of local charters and ordinances is, therefore, a first step.

In several cities objections to library purchase of land or exorbitant prices asked have led to condemnation suits. Some have been complicated by shortcomings in the legislation on bond issues, by condemnation suits, and by disputes as to respective duties of the fiscal body and library board. In several such cases the difficulties arose from the failure of the board of trustees to study the situation in advance as thoroughly as it would have studied similar problems in private business. Unnecessary delays occurred until proper enactments could be made by state legislatures and city councils. Again, the legislation itself has been confusing or contradictory.

Many curious and interesting legal points might be cited, and a collection of such cases would form a most useful volume for library trustees.

Under the head of legal aspects the following are suggested:

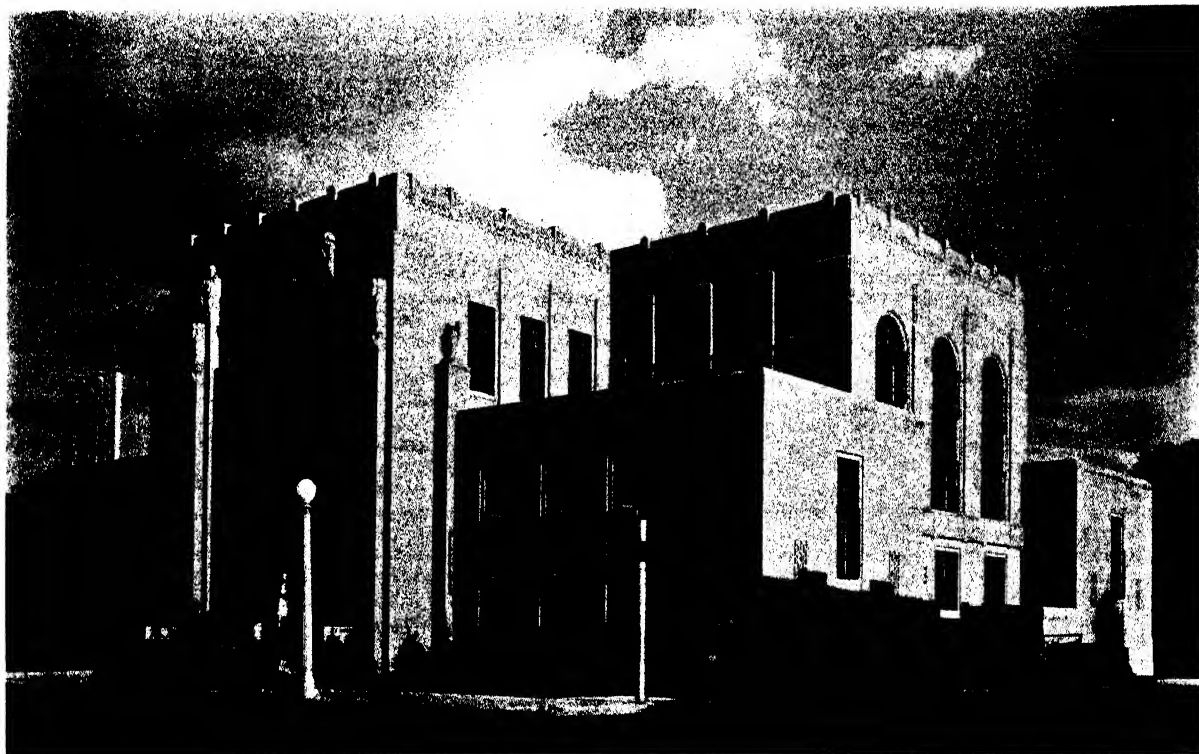
1. Appointment of an able lawyer, in or out of the Board of Trustees, to act as consultant from the very beginning of a library building project. Legislative matters cannot be left entirely to city or state employees occupied with other interests.
2. Careful study of enabling acts of other states, of charters and ordinances affecting libraries and public buildings in other cities, and of legal problems which have arisen after such legislation has been passed.
3. Proper drafting of a state enabling act if one seems necessary.

⁹C. B. Jöckel, *Government of the American Public Library*. Chic., 1935. pp. 211-12.

¹⁰Apply to authors for list of 11 citations relating to condemnation suits.

¹¹34 Ohio, App. 201. Also Cincinnati Public Library, *Annual Report*, 1928-1929.

¹²M. J. Ferguson, *American Library Laws*. Chic., 1930.



Public Library, San Antonio, Tex. An unusual pyramidal composition with the dignity a city library demands; yet its great arched doorway invites the public to enter. H. S. Green, architect, 1930.

4. Passage of local municipal ordinances for condemnation or other purpose, if needed.

5. Anticipation of legal technicalities that might be raised by property owners when the time comes to condemn and of questions on all legal problems that may arise.

VISUALIZING THE BUILDING

When funds are assured a new group of activities begin. Long before the architect is appointed the trustees and librarian have to develop as accurate a picture as possible of the location, size, general type of building, its capacity for volumes and readers, even to provision for the expansion and organization of library services by departments and the probable extent of their use over a period of years. They may already have secured a site, or the gift of a proposed site may be expected. Unless this site meets the requirements suggested in Ch. 6, it may be wise to consider an exchange of sites, or

sale and repurchase, in order that the investment in the building and future annual appropriations for service shall not be partially lost.

Regardless of site and the problem of entrance and exit involved, which affect the general appearance of the building, certain standard formulas of cost and size are useful and are given in Chs. 5 and 11. These need to be studied at an early stage.

The building should aim for as much area on the main floor and as few other public service floors as possible. Non-library activities, meetings, museums, or classrooms must be placed on other floors, and this suggests the question whether their additional cost should compete with the cost of providing properly for the library services themselves. See Ch. 22.

DESCRIPTION

With these general figures in mind and assuming a building well located, as suggested in

Ch. 6, a preliminary statement of tentative requirements of the building should be prepared in as much detail as possible to be presented to the architect upon his appointment. This should consist of a list of the important rooms, their book capacity, the number of readers, and the work to be carried on in them; a phase of the problem on which the architect needs help most. The desired relationship between rooms and the movement of readers from one room and from one floor to another should be outlined to the architect before he makes any sketches. It might be helpful to mention plans and exteriors of other buildings which meet the approval of the trustees or contain elements to their liking. Ch. 11 gives a summary schedule of the parts of the building.¹³

Early and continuously the local librarian, possibly aided by an advisory librarian, consulting with the building committee of the board and the architect, should reduce their ideas to pencil plans and detailed memoranda concerning the points enumerated in Ch. 11. The earlier these elements are studied the better the architect's foundation for analysis and understanding. There is great value in making pencil sketches and preparing memoranda; they crystallize questions and ideas, push the work forward and help to prevent oversights and misunderstandings.

The capacity of the building can be divided into four elementary groups, to which preliminary consideration should be given:

¹³The authors have a list of recent building programs, most of them issued in typed or mimeographed form. It is a short list because, unfortunately, few libraries have taken time to work out this essential document.

(a) books on open shelves; (b) books in storage; (c) reader accommodation; and (d) staff and work space.

The enumeration of these four capacities, discussed in Chs. 5 and 11, raises the question of general arrangement of the building and the relationships of all these elements therein. That is the joint problem of architect and librarian. It is helpful, therefore, to try out various combinations. When the most promising have been sketched as rough plans, imagine readers of different ages and types and show their routes as they come for different kinds of material and move about the building to (a) return books; (b) go to reading rooms; (c) go to shelves or request books; (d) have books charged; (e) meet staff members as they go through these steps. The essential problem of library planning simmers down to the careful study of the distribution of the four major capacities and the convenient movement of readers, staff and books in connection therewith.

The various plans in Chs. 23-32 show how great a variety of arrangement is possible and suggest new and workable combinations, while Ch. 33 attempts to summarize the principles of arranging the plan. Some plans included in this book are examples of certain errors and show inadequate study and failure to seek the advice of other architects and librarians. That no plan of merit bursts full-grown from one or even from several minds can be verified from the histories of building projects. The case of York, Pa., with the diagrams of the developing plan, in Ch. 8, is typical, showing the value of continuous study and exchange of ideas.

CHAPTER 4: STATISTICAL DATA FROM THE LIBRARY BACKGROUND

BEFORE library trustees and others responsible for planning a new building can decide on its size and cost, they must gather certain statistical data about the library and the community which it serves. Standards of operating costs, the number of patrons, workers, volumes, circulation, and other elements to be provided for, are presented here. From these can be calculated the proper size and cost of new buildings and their major interior areas as developed in Chs. 5 and 11.

The service of a library is most commonly measured in per capita. It has been generally agreed that a new building should be adequate for at least 20 years. Therefore, it is important to estimate the population 20 years hence.

This is hazardous. From the preliminary 1940 census returns and from previous decennial figures, we know that the rate of increase in the decade 1930-1940 is less than one-half that shown in any previous decade since the first census in 1790.² The Scripps predictions³ for 1960 indicate a national growth of only 9.4% for the twenty years 1940-1960.

TABLE 1

YEAR	POPULATION	INCREASE
1900 ¹	75,994,575 ¹	.....
1910 ¹	91,972,266 ¹	21.0% ¹
1920 ¹	105,710,620 ¹	14.9% ¹
1930 ¹	122,775,046 ¹	16.1% ¹
1940 ²	131,409,881 ²	7.0% ²
1950 ³	138,908,000 ³	5.7% ³
1960 ³	143,779,000 ³	3.5% ³

¹ U. S. Bureau of the Census: *Statistical Abstract*, 1930, p. 2.

² U. S. Bureau of Census: *Summary of Preliminary Population Figures for the U. S., by States: 1940* (September 22, 1940), p. 1.

³ *World Almanac*, 1940, p. 488, assumption 11a.

These figures show national growth; but the growth figures for cities are much greater than those for the nation.^{3a} The 1940 figures and com-

petent estimates therefrom will soon be available. We might predict an average 25% growth in cities in the next 20 years,⁴ but each community, in the light of local conditions, should predict its own population 20 years hence.

INFLUENCE OF ADMINISTRATIVE POLICIES

Before considering population we call attention to an aspect of the local library situation which influences the quality and volume of library service far more than is realized and therefore affects building capacities. The age of the library and the continuity of its constructive rather than passive policies, its adequate support, its activity and effectiveness as an institution and its general recognition by the community are reflected in the use of its building. Cities which stand near the bottom of the list in respect to circulation are generally victims of indifferent or timid boards, incompetent librarians, staffs appointed for reasons other than highest capability, or the economic backwardness of the area, resulting in meagre support.

The abilities of librarians and the progressive, courageous policies of trustees outweigh other influences and give a high book consumption in many communities considered uncultured and heterogeneous. A new board member or change of librarian at a central or branch library sometimes produces marvellous results, though other factors remain the same. The greater availability of "readable books" for the average man and woman, the elimination of delays in getting new books, the development of rental collections to supplement regular bookstocks, increasing efficiency among trained

^{3a} Thompson and Whelpton. *Population Trends in the U. S.* Table 9, p. 26.

⁴ John A. Lowe assumes a "community of 20,000 growing normally will probably double its population in 20 years." (*Small Public Library Buildings*. A.L.A., 1939, p. 10). This seems erroneous.

library workers—all these increase library patronage and therefore its need of space. A progressive library, in other words, requires more adequate housing than a backward one.

STANDARDS OF THE AMERICAN LIBRARY ASSOCIATION

The standards offered here as a basis of calculation are slight modifications of those officially approved and widely published by the Association. They are on a per capita basis. Most library systems are below them, but they are within the range of all progressive libraries and have been reached and surpassed by some. The standards assume a progressive library, and it is reasonable to provide for the materials and services they imply.

It is essential to note that there are two distinct factors in estimating the amount of library material and service 20 years hence, which, multiplied together, give the total material and service a new building should accommodate:

- A. The per capita standards, or such modification of them as the A.L.A. may make.
- B. The population predicted for 20 years hence, arrived at by adding 20 years of population growth to present population.

THE POPULATION TO BE SERVED

The community population 20 years hence may be roughly estimated from figures in the possession of the chamber of commerce, the real-estate group, the telephone company, and the municipal power and water departments; all these naturally rest on previous census figures.

The possibility of abnormal growth must not be overlooked. In the ten years between 1920 and 1930, Houston and Los Angeles more than doubled in size, while Dearborn (Mich.) grew from a population of 2,500 to one of more than 50,000. Yet in that same period, Bridgeport, Scranton and Richmond reported increases of only 2, 4, and 6%, respectively, and numerous cities decreased markedly from 1930 to 1940.

Character of the Population. There is no formula to show how the *type* of population (mill,

foreign-born, slum, unsocial, residential) may affect the circulation per capita. But this factor deserves study. Many libraries are heavily used because they happen to serve communities with a high intellectual status, or a high proportion of leisured persons, or because civic and cultural activities have developed so effectively that these are notably good cities in which to live. Such cities are analyzed and rated in E. L. Thorndike's *Your City*, 1939, and his companion book *144 Smaller Cities*, 1940. Library officials should make additional library provision in cities which Thorndike ranks high.

EFFECT OF NEAR-BY LIBRARIES

The proximity of an independent library—other than the usual small commercial circulating library—has a decided bearing on the requisite size of any public library building. Fortunately such duplication of function exists in few cities. At Albany, N. Y., the Bleecker Library (the central public library) is only two or three blocks from the great State Library. The Bleecker Library appears completely inadequate when one considers the population of Albany, but this inadequacy is somewhat explained when one learns that much of the reference patronage is taken care of by the State Library. This relationship must not, however, be thought of as common to all cities where an old library of the Athenæum type, or a reference library for a limited clientele, is still in existence, for few of these have incomes permitting the purchase of current reference books on any such scale as is essential for the reference department of a normal modern public library.

The location of a community in the shadow of a larger city with good library facilities appears, on the other hand, quite negligible in computing its proper library service. While the few surveys of library service which cover such cases mention numerous instances of individual readers who depend on the library of the city of their employment, especially for extra-specialized reference work, there is nothing to indicate that this is extensive enough to affect the size

or quality of the library's obligation to its immediate community.

POPULATION SERVED BY CENTRALS AND BRANCHES

Library statistics afford no indication that the capacity of a central library building is in any way affected by the presence of a branch library system. Any saving in space due to the deflection of patrons to branches appears counterbalanced by the need for additional area at the central library for administration, preparation, distribution, repair and storage for the branch system, and by the fact that added branches attract more readers to the central library, particularly for advanced reference work.

Every large central building has been crowded within the 20 years always cited as the safety period for planning capacity. This has been true even in cities where branch bookstock and patronage are as great as those at central. Centrals contain a vast amount of bulky material which is never counted as regular bookstock, but is too useful to discard. An example of the extremes of proportionate branch and central organiza-

tion may be seen at Brooklyn and Mount Vernon, N. Y. The former has operated for years with many branches but no central, the headquarters and main stock crowded into rented space in an office building. Its new central building is no smaller on that account, and though its location may not bring it normal patronage, it is plain that in a busy location it would be occupied to capacity within 20 years. Mount Vernon, with 70,000 population, has a large and active central, enlarged three times, but it has no branches. Imagining one or two busy branches, it is doubtful if the bookstock, number of patrons, circulation or reference work at central would be appreciably decreased, while the likelihood is that reference questions and their supporting materials, growing out of new branch patronage, would considerably increase at central.

In short, the division of library service among a number of branches does not warrant the planning of a smaller or cheaper central building. Regardless of the amount of decentralization, the size of the main library should be calculated on the basis of total community population.

TABLE 2
ACTUAL AND ESTIMATED NUMBER OF BRANCH BUILDINGS PER
CITY POPULATION¹

POPULATION (CITY GROUPS)	AVERAGE NUMBER OF BRANCHES PER CITY ²	SUGGESTED MINIMUM POPULATION PER BRANCH	PROPOSED NUMBER OF BRANCHES PER CITY
50,000- 75,000 ³	1.9	30,000	..
75,000- 100,000.....	2.4	33,000	1
100,000- 150,000.....	2.7	35,000	2
150,000- 200,000.....	3.0	38,000	3
200,000- 250,000.....	3.0	40,000	4
250,000- 300,000.....	5.3	43,000	5
300,000- 400,000.....	7.4	45,000	6
400,000- 500,000.....	9.0	48,000	8
500,000- 1,000,000.....	14.6	50,000	9 to 16
Over 1,000,000.....	25.3	55,000	17 and up

¹ See Tables 6 and 8 below for proportions of actual bookstock and circulations at centrals *vs.* branches, as bearing on the matter.

² Based on figures gathered in 1936 from 104 cities, as to the number of branches operating in buildings of their own. They do not include branches in rented space, in schools, etc.

³ This group includes 24 cities of between 50,000 and 75,000 population.

BRANCH POPULATION ESTIMATES

There is no formula published to show the population proportion that would use a branch.⁵ We suggest it be defined as the population within a mile radius or—better yet—that within an oval with a 2½-mile major axis along the chief thoroughfare. See Ch. 6 for diagram showing branch population area.

But when the population of this branch area is obtained, is it large enough to justify a new building? The authors have attempted, through a study of the actual number of branches in cities of over 50,000 population, to provide some answer to this problem by establishing a schedule of minimum populations for which to provide new branch buildings. Table 2 presents the actual and proposed number of branches in the different city-size groups. In Ch. 36 some comment is made on the application of this table to a given community.

Table 2 expresses the authors' belief that it is better to have a few strong and well-equipped branches than many weak units. It is the old "larger areas of service" idea applied to a municipal library system. Numerous small branches have been established in city neighborhoods of less than 15,000 population—generally through neighborhood pressure or as a result of memorial gifts—but the need for the initial investment and future annual cost in such small or thin areas may be challenged. Among 76 post-war branches chosen at random, the following table shows:

PERCENTAGE OF BRANCHES IN
CIRCULATION-SIZE GROUPS

CIRCULATION PER BRANCH	NUMBER OF CASES	PER CENT OF CASES
Under 75,000 circulation...	12	16
75,000-150,000 circulation...	35	46
150,000-250,000 circulation...	17	22
250,000-500,000 circulation...	10	13
Over 500,000 circulation...	2	3
Total.....	76	100

⁵Table 8 presents a break-down of annual circulation figures but there seem to be no population figures available or obtainable to which this may be related.

The fact that only one branch in six lent less than 75,000 volumes a year would suggest this as the "point of diminishing returns." It is to be noted, however, that on the basis of the actual service of many libraries and the standards set up (Table 7), a circulation of 75,000 volumes should easily be attained by an efficient, well-stocked, and well-serviced branch library with an interested population as small as 8,000 or 10,000. But the authors predict a trend away from branch buildings serving less than 25,000 population or lending less than 100,000 books a year, because of their proportionately high overhead cost and their tendency to overemphasize circulation work. This tendency is due to the fact that the expense for effective reference stock and personnel is hard to justify in such small units. The successful development of scheduled service from trailer truck deliveries to outlying neighborhoods suggests an effective substitute for numerous small and expensive branches.

REGISTERED BORROWERS

Though theoretically registration of children compared with that of adults should correlate with the amount of reading-room space assigned to each, this does not seem to be the case. Small libraries usually allot as much area to children as to adults, yet registration is as 1 to 2. Large libraries with branches publish only the registration for combined centrals and branches, averaging about the same proportion of 1 to 2; the centrals have a very small area for children and the branches divide the area about evenly. Registration figures are, therefore, of little value in allotting proportionate areas in a new building, so are not further analyzed in this book.

LIBRARY SUPPORT

With population as the primary factor in calculating library services and building requirements, the size of bookstock, number of workers, volume of business, all depend on operating funds. While a discussion of annual budget support and expenditure would be interesting, our

standards of per capita bookstock and services are based on the assumption that library support will be at least the \$1.00 per capita which the American Library Association has for several years advocated as the minimum for fairly adequate service. This may appear high to some communities which spend much less, but no such community can have any understanding of what is meant by modern effective library service. Its fairness is proved by the number of cities and towns of all sizes now spending considerably more.

BOOKSTOCK

An important element affecting the size of the building is the size of its bookstock. It has been

(c) predictions are confusing as to probable increase in tax support and library revenues for the next twenty years. From 1910⁶ to 1930⁷ (20 years), 25 cities of over 200,000 population grew 55% in population, 187% in bookstock and 321% in circulation. But from 1929⁸ to 1939⁹ (10 years) the *first* 25 cities grew only 5.2% in population^{9a} 19%¹⁰ in bookstock and 7% in circulation. Doubtless the 1940 census will show a smaller rate of growth.

Any curve or formula of prediction we might create under such conditions has slight value. We have therefore taken the standards issued by the A.L.A. in 1933 as applicable to a progressive library. They have the authority of the A.L.A. behind them, and have been generally

TABLE 3
BOOKSTOCK; CAPACITIES; VOLUMES PER CAPITA

POPULATION GROUPS	ALL LIBRARIES ¹ 1939	NEW LIBRARIES ² 1920-1940	STANDARDS ³ A.L.A.	STANDARDS ⁴ ADJUSTED	STANDARDS ⁵ WHEN REVISED
I. Under 10,000 ..	2.4	5.1	3.0	3.00	
II. 10,000-35,000 ..	2.117	1.8	2.0	2.50	
III. 35,000-100,000 ..	1.552	2.8	2.0	2.00	
IV. 100,000-200,000 ..	1.258	2.2	2.0	1.75	
V. Over 200,000 ..	.962	1.1	1.5	1.50	

¹ From statistics, *A.L.A. Bull.*, Apr., 1940; medians of actual bookstock in centrals and branches together; based on population as given in 1930 census; hence figures are higher than they should be. Item I received by correspondence.

² From questionnaire by authors to librarians of post-war buildings; represents capacities of main buildings, based on population when erected.

³ Published by A.L.A. in 1933; unchanged since, except that the standard of Group IV was recently reduced to 1.50. See *Classification and Pay Plans*, A.L.A., 1939, page 15. Represents bookstock for centrals and branches.

⁴ Adjustment by authors for a more reasonable and gradual transition. Applicable to centrals as explained in text; to be multiplied by population twenty years hence.

⁵ Space for any change in standards confirmed by A.L.A.

difficult to devise any formula that relates the size of bookstock to population. The actual sizes of a large number of buildings erected since 1920 show disconcerting fluctuations, some far above, others far below any book capacity standards the authors have tried to apply.

To estimate what a given city's bookstock should be twenty years hence is especially perplexing at this time, because (a) 1940 census figures are not available to reveal just how per capita stocks have been increasing since 1930, (b) the depression has slowed accessions down so drastically that conditions are now abnormal,

recognized. But they were not set up as standards for twenty years hence and they have already been reached in many cities. They appear in column 3 of Table 3, contrasted with column 1, of actual statistics of 1939 stocks, and with column 2, of capacities of 47 buildings erected

⁶Table by B. C. Steiner, in *Enoch Pratt Free Library Annual Report*, 1911, p. 89.

⁷*Lib. Jour.*, 56:460, May 15, 1931.

⁸*A.L.A. Bull.*, 26:744, Sept. 1932.

⁹*A.L.A. Bull.*, 34:269, Apr. 1940.

^{9a}*U. S. Census release. Series P. 3, no. 1.* Sept. 23, 1940.

¹⁰Estimated on same rate of increase as 1920-1930 census increase.

1920-1940. Column 4 shows a readjustment which the authors considered desirable to give more even intervals in the A.L.A. figures. An empty column 5 is also given in the belief that the A.L.A. will revise and probably raise the standards within a year or two. Until then it is recommended that the standards in column 4 be used for calculating.

The figures in column 4 are to be multiplied by the population estimated for 20 years ahead. The resulting figure, which the A.L.A. set up for total community stock, is to be used as the book capacity of the central building. As explained above, the existence of a series of branches with their book collections does not appear to affect the size of central libraries. For one reason, the regular counted bookstock is only a part of the material which must be housed in a central building. For another, cen-

tral buildings which meet the proposed standards would be larger in proportion to population than many which have been erected in the past and would thereby avoid the overcrowding so commonly experienced. The resultant capacities are not unreasonable, for many buildings erected since 1920 exceed the size called for by this formula, *e.g.*, Cleveland, Baltimore, Rochester, Toledo, Wilmington.

DISTRIBUTION OF BOOKSTOCK

Table 4 has been prepared from returns from 59 typical cities. It shows the proportion of city-wide bookstock at central and branches, in each of the five population-size groups, and the breakdown of central and branch bookstock into the major categories, *i.e.*, adult and juvenile, open and closed shelf books, reference, etc. These 59 cities have 206 branches.

TABLE 4

DISTRIBUTION OF BOOK STOCK: CENTRAL VS. BRANCHES; ADULT AND JUVENILE; OPEN AND CLOSED SHELF,¹ ETC. PROPORTION OF PARTS TO TOTAL STOCK

FROM 59 TYPICAL CITIES IN FIVE POPULATION-SIZE GROUPS, 1938 SEE TABLES 8 AND 12 COVERING THE SAME CITIES					
1. Population-Size Group.....	Group 1 Below 10,000	Group 2 10,000 35,000	Group 3 35,000 100,000	Group 4 100,000 200,000	Group 5 200,000 Upward
(No. of cities)	(15)	(11)	(12)	(11)	(10)
2. Total Population.....	93,176	250,488	731,013	1,393,913	8,454,313
3. Total Stock in Whole Systems.....	229,218	670,072	1,183,604	1,379,032	6,999,865
4. Adult Fiction in Central.....	67,154	97,355	175,040	185,366	386,784
5. Percentage of Total Central Stock.....	29.8	16.0	19.2	17.4	10.4
6. Percentage of Fiction on Open Shelves ...	99.3	83.3	94.6	68.6	47.0
7. Adult Non-Fiction in Central	90,914	320,483	432,857	523,753	1,701,531
8. Percentage of Total Central Stock.....	40.3	52.9	47.6	49.1	45.8
9. Percentage of Adult Non-Fiction on Open Shelves.....	99.2	51.9	82.2	65.1	34.5

¹ The proportion of closed shelf stock in branches is not tabulated, because, with the exception of Chicago and Cleveland, no town or even large city reported an appreciable amount of stock on closed shelves in branches. The text of this book points out the desirability for additional closed shelving for branch reference materials.

TABLE 4—Continued

	Group 1 Below 10,000	Group 2 10,000- 35,000	Group 3 35,000- 100,000	Group 4 100,000- 200,000	Group 5 200,000 Upward
10. Reference in Central.....	8,658	43,054	89,564	130,413	869,992
11. Percentage of Total Central Stock.....	3.8	7.1	9.8	12.2	23.4
12. Percentage of Reference on Open Shelves..	96.5	58.6	67.0	70.7	18.9
13. Bound Periodicals in Central.....	6,433	44,671	48,361	71,155	353,637
14. Percentage of Total Central Stock.....	2.8	7.3	5.3	6.6	9.5
15. Percentage of Bound Periodicals on Open Shelves.....	80.3	43.9	53.1	25.0	3.5
16. Juvenile in Central.....	51,631	96,487	158,591	145,755	366,043
17. Percentage of Total Central Stock.....	22.9	15.9	17.4	13.6	9.8
18. Percentage of Juvenile on Open Shelves..	99.6	96.6	98.6	85.5	64.4
19. Bound Newspaper Volumes in Central....	456	2,778	4,290	8,676	29,671
20. Bound Newspaper Volumes per Capita ²...	.0049	.0110	.0059	.0622	.0035
21. Total Volumes in Central.....	225,246	604,828	908,703	1,065,118	3,707,658
22. Percentage of Total Central to Total City Stock.....	98.2	90.2	76.7	77.2	52.9
23. Running Feet of Additional Shelving for Unprepared Materials in Central Build- ings.....	4,842	5,675	(10 cities only) 10,644	(10 cities only) 28,240	30,347
24. Equals ft. of Such Additional Shelv- ing per 1000 Volumes of Regular Stock in Central Buildings.....	21.496	9.382	11.713	26.513	8.184
25. Adult Fiction in Branches.....	1,450	12,989	65,056	101,381	826,093
26. Percentage of Total Branch Stock.....	36.5	19.9	23.6	32.2	25.0
27. Adult Non-Fiction in Branches.....	1,050	19,743	90,994	86,154	1,395,496
28. Percentage of Total Branch Stock.....	26.4	30.2	33.1	27.4	42.3
29. Reference Volumes in Branches.....	72	1,669	10,755	9,975	112,658
30. Percentage of Total Branch Stock.....	1.8	2.5	3.9	3.1	3.4
31. Bound Periodicals in Branches.....	0	0	5,109	1,505	20,755
32. Percentage of Total Branch Stock.....	0	0	1.8	.4	.6

² Per capita arrived at by taking 1930 population of the number of cities indicated at top of each column, and dividing it by total volumes in these cities.

TABLE 4—Continued

	Group 1 Below 10,000	Group 2 10,000– 35,000	Group 3 35,000– 100,000	Group 4 100,000– 200,000	Group 5 200,000 Upward
33. Juvenile in Branches	1,400	30,843	102,987	114,889	937,205
34. Percentage of Total Branch Stock	35.2	47.2	37.4	36.5	28.4
35. Bound Newspaper Volumes in Branches ..	0	0	0	10	0
36. Total Volumes in Branches	3,972	65,244	274,901	313,914	3,292,207
37. Percentage of Total Branch Stock to Total City Stock	1.7	9.7	23.2	22.7	47.0
38. Number of Cities Having Branches and Number of Branches	1 = 1	6 = 14	10 = 37	10 = 67	10 = 206

In studying and applying the foregoing, one will note the unevennesses which usually characterize actual figures, *e.g.*, in lines 22 and 37, where group 4 shows a larger proportion of city bookstock at central than would fit evenly into the rate of decrease shown in the adjoining columns. Also, in line 38 one town of less than 10,000 population is unusual in having a branch.

Assuming a city in the given size group, line 3 gives the total 1938 stock. This can be related to population, and can also be subdivided according to the percentages which follow, making due allowance for the unevennesses just referred to.

Fiction (line 26) forms a much larger proportion of branch stock than of central stock (line 5). But no conclusive difference appears

as to the proportions in branches in different size cities, though in centrals (line 5) there is a marked, though uneven, decline from 30% to 10% in fiction proportions as the cities grow larger. Juvenile stocks also show a marked decline at centrals as the cities grow larger (line 17).

The figures in Table 4 are 1938 actuals; they are not capacity figures. A new central building should provide for the total stock called for in column 4 of Table 3, subdividing the stock according to the proportions in Table 4.

BRANCH BOOKSTOCK

Lines 36, 37, and 38 of Table 4 bear on the question of branch bookstock, but they require readjustment, as in Table 5.

TABLE 5
STOCK PER BRANCH
(See comment in second paragraph following)

	Group 1 Below 10,000	Group 2 10,000– 35,000	Group 3 35,000– 100,000	Group 4 100,000– 200,000	Group 5 200,000– Upward
Percentage of total branch stock to total city stock					
1938 Actual	1.7%	1.7%	23%	23%	47%
Proposed	0	0	25%	35%	50%
Stock per branch					
Present Actual	0	4,665	7,429	4,685	15,962
Proposed Capacity	0	0	10,000	15,000	20,000

The upper figure in each square is taken from Table 4, the lower figure a readjustment suggesting the omission of branches in groups 1 and 2 and what we suggest as proper capacities in the larger groups. Branches in large cities are much larger and contain many more books than in small cities because density of population is greater. See also comment in Ch. 36 on branch bookstock.

Branch book capacity must, however, be based on the population of the individual branch area as estimated for 20 years hence, and this, naturally, is only suggested by Tables 2 and 5. After the population is estimated the question is how many volumes per capita the branch should have. As pointed out earlier, any estimate of the population served by a branch must necessarily be far from accurate, and for that reason no experience statistics have been found on which to base a formula in connection with Table 2. Nevertheless, we believe that estimated future branch population should be multiplied by $\frac{1}{3}$ volume per capita, to get the proper branch capacity.

Branches vary greatly from centrals in two matters relating to bookstock: (a) at branches there is no obligation to keep older little-used books which, with the very large amount of other materials, e.g., unbound periodicals, a central library must keep for its reference work. (b) For this reason the capacity may be very

TABLE 6
BRANCH BOOKSTOCK AVERAGES
BY CIRCULATION GROUPS

CIRCULATION GROUPS	NUMBER OF CASES	BOOKSTOCK AVERAGE
Up to 75,000.....	37	6,520
75,000-150,000....	58	11,062
150,000 Upward....	43	19,628

close to the regular counted bookstock at the branch and the growth of the branch book collection will be much slower than that at central.

Table 6 presents figures gathered from 138 branches showing bookstock related to branch

circulation, because experience may give library officials the conviction that a certain circulation may be reached in a proposed branch, and the appropriate book capacity needs to be estimated. These are actual stocks and *not* capacity figures. But this small table reminds us that the stock figures were for actual stocks in 1935, not capacities, and that most of the libraries reporting stated their shelving was inadequate. For conditions 20 years hence the capacities should probably be 50% larger than these figures.

CIRCULATION

With population and support as the basis for bookstock we now consider the circulation which should result. Circulation figures help to indicate the general activity and effectiveness of a library, for it is almost invariably true that libraries having high per capita circulations are utilizing their resources effectively, their reading rooms as well as their circulation desks are busy, and they reach building capacities much sooner than the backward library. Circulation is one of the three elements in the V.S.C. Formula used in Ch. 5 to calculate building size. Even branch circulation affects the size of the central building, for the preparatory processes, the paper work and records connected with branch circulation require the attention of many of the central staff and therefore require space in the central building. Book selection, cataloging, registration, reserves and overdues, reference work and the housing of reference materials drawn on daily through branch requests, these are a few of the activities required by the branches but centralized at the main building. For this reason general city circulation is taken for the V.S.C. Formula, in Ch. 5, though in large cities half or two thirds of the books lent are drawn from the branches. Circulation is also a guide to estimating the number of library employees to be provided with working space.

Table 7, like Table 3 on Bookstock, takes the A.L.A. standards issued in 1933 as a basis for calculating circulation for entire cities. They were proposed as applicable to a progressive

TABLE 7
CIRCULATION, ACTUAL AND PROPOSED PER CAPITA AND PER ASSISTANT¹
(Total Systems)

POPULATION GROUPS	CIRCULATION PER CAPITA			CIRCULATION PER ASSISTANT ⁴		
	Median of All ¹ Libraries, 1937	Standards ² A.L.A.	Standards ³ When Rev.	Median ⁵ 1937	Standards ⁶ A.L.A.	Standards ³ When Rev.
I. Under 10,000	8.36	10.0		26,000	25,000	
II. 10,000-35,000	8.50	9.5		23,049	20,000	
III. 35,000-100,000	7.37	9.0		20,036	20,000	
IV. 100,000-200,000	5.18	8.0		17,791	15,000	
V. Over 200,000	4.31	7.0		15,954	15,000	

¹ From Statistics, *A.L.A. Bull.*, Apr., 1938.

² Published by A.L.A. in 1933; revised in 1939 with population-size groups changed but without materially changing the per capita. See *Classification and Pay Plans*. A.L.A., 1939, p. 15.

³ Space for later standards when confirmed by A.L.A.

⁴ Includes all employees excepting janitors, building force and bindery force.

⁵ See Note 1, except Group I figure was omitted in A.L.A. tables and is estimated by authors.

⁶ A.L.A. standards on this were first issued in 1939 but on slightly different population groupings. See *Classification and Pay Plans*, A.L.A., 1939, pp. 4-11.

library. They were not set up as standards for 20 years hence, and they have already been reached in many cities. The recent slowing down of circulation in contrast to previous great gains, as discussed above in introducing Table 3, makes precarious any attempt to create a new set of standards applicable 20 years hence. The A.L.A. standards or their successors (cols. 2 and 3) are therefore to be multiplied by the estimated future population.

It should be noted that the A.L.A. standards in column 2 are to be multiplied by the estimated population 20 years hence, to find the future circulation, and this figure divided by the figure in column 6, to predict the size of library staff.

Table 8 is an actual 1938 experience table of central and branch circulation, from the same 59 cities covered in Tables 4 and 12, with which it should be related. Table 4 gives the number of branches covered. The actual figures are of some significance in themselves, but as they reflect present rather than future conditions they should be studied for their percentages and proportions, and then used in connection with the estimated standard totals in Table 7.

One of the interesting items in Table 8 is the recognition of circulation from the Stations and

Schools Divisions (see lines 14 and 15) which, though separate from the central collection, are housed in the main library and handled by workers there. In the large city group this amounts to 17% of the total city circulation.

READERS WITHIN THE BUILDING

It is usual to think of library service in terms of circulation figures, but the number and type of readers must be considered. Figures of daily visitors, or of readers seated, or of other book use within the building are so rarely kept that there are few estimating formulas for reading-room sizes and seatings. Adequacy of provision in other cities of similar size should be checked as a guide.

The number of adult and juvenile seats were reported from 158 branches in communities of over 50,000. Modifying the actual returns to provide a more consistent series of fair proportions, Table 9, column 5, gives children's seatings at branches. For central buildings column 7 is the authors' rough estimate, by population-size groups, based on a review of the plans in Chapters 25-32. See also Table 4 in Ch. 5 for additional data on seats per thousand capita.

TABLE 8
PROPORTIONS OF CIRCULATION—CENTRAL, BRANCHES, ADULT, JUVENILE
 (Based on 1938 Statistics from the Same 59 Cities as in Tables 4 and 12)

1. Population-Size Group	Below 10,000	10,000- 35,000	35,000- 100,000	100,000- 200,000	200,000- Upward
Number of Cases	(15)	(11)	(12)	(11)	(10)
2. Total Population	93,176	250,488	731,013	1,393,913	8,454,313
3. Total Circulation	944,284	2,373,753	6,163,803	6,233,028	38,223,122
4. Adult Fiction from Central	361,072	831,547	1,574,673	1,623,126	2,916,397
5. Adult Non-Fiction from Central	215,345	386,124	1,226,638	875,733	3,456,879
6. Juvenile from Central	321,818	544,342	719,569	770,261	2,373,983
7. Total Circulation from Central	898,235	1,762,013	3,520,880	3,269,120	8,747,259
8. Per Cent of Central Circulation to Total Circulation	95.1	74.2	57.1	52.4	22.8
9. Adult Fiction from Branches	14,811	89,845	648,148	690,359	9,653,328
10. Adult Non-Fiction from Branches	2,879	64,645	375,119	199,784	5,051,475
11. Juvenile from Branches	10,856	232,084	1,006,571	1,345,191	8,254,187
12. Total Circulation from Branches	28,546	386,574	2,029,838	2,235,334	22,958,990
13. Per Cent of Branch Circulation to Total Circulation (Based on Total from All Systems)	3.0	16.2	32.9	35.8	60.0
14. Station, School and Other Circulation	17,503	225,166	613,085	728,574	6,516,873
15. Per Cent of Station, School and Other Cir- culation to Total Circulation	1.8	9.4	9.9	11.6	17.0

TABLE 9
PROPORTION OF CHILDREN'S¹ TO TOTAL READING ROOM SEATS

Circulation	ACTUAL FOR 158 BRANCHES				ESTIMATED FOR CENTRALS	
	Number of Buildings	Total Seats	Seats per Building	Percentage of Children's to Total Seats	Population	Percentage of Children's to Total Seats
Up to 75,000 ...	44	2093	47.5	50%	Up to 10,000	40%
75,000-150,000 ...	61	4524	74.1	47%	10,000- 35,000	35%
150,000-250,000 ...	48	4802	100.0	44%	35,000-100,000	25%
250,000-500,000 ...	5	672	134.4	40%	100,000-200,000	15%
Over 500,000 ...	—	—	—	37%	Over 200,000	8%

¹ "Children's rooms" is used with its common library application, i.e., for children up to 12-14 years, but not including "intermediates."

TABLE 10
BOOKS AND READERS: SIX RECENT LARGE BUILDINGS

CITIES	BUILT	POP. (1930)	SQ. FT. ² COST ALL LEVELS CU. FT. (for the entire building)			BOOK CAPACITY			READERS' SEATS	READING ROOMS
						Open	Closed	Total		
Cleveland	1925	900,000	\$5,000,000	217,500	4,375,000	300,000 ³	1,700,000 ³	2,000,000	2000	16
Los Angeles	1926	1,240,000	2,300,000	260,000	4,750,000	150,000 ³	1,063,000 ³	1,213,000	1200-1400	15
Philadelphia	1927	1,950,000	6,000,000	276,900 ⁷	6,000,000	63,000	1,937,000	2,000,000	1740-1800	16
Baltimore	1932	805,000	2,250,000	220,000 ⁸	4,500,000	120,000	1,480,000	1,600,000	1100-1300	16
Rochester	1936	330,000	1,265,000	115,000	1,835,000	160,000	672,000	832,000	600	15
Toledo	1940	281,000 ¹	1,245,129	183,161	2,731,263	184,000	941,000	1,125,000	612	18

¹ 1940 population.

² Entire floor space.

³ Cleveland estimate.

⁴ Los Angeles. Reading rooms, capacities.

⁵ Cleveland stacks not yet all installed.

⁶ Los Angeles. Lowest tier to be shelved later.
Present capacity, 992,640 volumes.

⁷ Philadelphia

Main Rooms 83,276

Work Rooms 87,989

Corridors 25,749

Stacks 67,840

Roof Terrace 12,046

⁸ Baltimore.

Sq. ft. per level

26,996 1st stack level

34,610 2d stack level

24,500 3d stack level

40,044 1st floor

3,105 Mezzanine

24,243 2d floor

3,348 5th stack level

21,315 3d floor

3,348 7th stack level

Relationship between number of readers' seats and bookstock, as well as with total square foot area, in six of the largest recent buildings, is shown in Table 10. The similarity in number of public reading rooms is rather striking, in view of the great differences in other capacities.

SIZE OF LIBRARY PERSONNEL

Another element to consider in planning the new library building is the size of the personnel

(including library service staff and building force). The amount of space assigned to offices, service desks, workrooms, catalog and preparation departments, and staff and janitor quarters is considerable, and its proportion to population and circulation is likely to increase because of the increasing amount of library service demanded by the public. This is especially true of general reference work and the acquisition and more intensive analysis and preparation of materials for specialized reference services.

TABLE 11
RELATION OF PERSONNEL TO POPULATION FOR ENTIRE SYSTEMS

POPULATION GROUPS	ACTUALS 1937 ¹	STANDARDS, A.L.A. TABLE 7				ACTUALS, TABLE 12	
	Circ. per Lib. Staff	Circ. per Lib. Staff ²	Circ. per Capita ³	Pop. per Lib. Staff ⁴		Pop. per Lib. Staff ⁵	Pop. per Bldg. Force ⁶
I. Below 10,000	26,000	25,000 ÷	10.0 =	2,500		2,094	7,032
II. 10,000-35,000	23,049	20,000 ÷	9.5 =	2,105		2,505	12,845
		(22,500)		(2,368)			
III. 35,000-100,000	20,036	20,000 ÷	9.0 =	2,222		2,521	20,166
IV. 100,000-200,000	17,791	15,000 ÷	8.0 =	1,875		4,173	26,054
		(17,500)		(2,187)			
V. Over 200,000	15,954	15,000 ÷	7.0 =	2,143		3,442	20,433

¹ See columns 5 and 6, Table 7.

² We have inserted two figures to make more even intervals in column 2, which results in evening out column 4.

³ From Table 7. ⁴ See Note 2.

⁵, ⁶ These actuals, derived by dividing library staff and building staff into total populations represented in Table 12, give population per library staff (not counting building force) quite different from those in column 4. In column 5 the figures increase with size of city, while in column 4 they decrease.

TABLE 12
PERSONNEL AT CENTRAL AND BRANCHES, BY CATEGORIES
 (Based on 1938 Statistics from the Same 59 Cities as Tables 4 and 8.)

1. Population Size Groups	Below 10,000	10,000- 35,000	35,000- 100,000	100,000- 200,000	200,000 Upward
(No. of Cities)	(15)	(11)	(12)	(11)	(10)
2. Total Population	93,176	250,488	731,013	1,393,913	8,454,313
3. Total Circulation	944,284	2,373,753	6,163,803	6,233,028	38,223,122
4. Total Personnel	573 $\frac{1}{4}$	119 $\frac{1}{2}$	326 $\frac{1}{4}$	387 $\frac{1}{2}$	2869 $\frac{1}{2}$
CENTRAL PERSONNEL¹					
5. Circulation	16	26	75 $\frac{1}{2}$	81 $\frac{1}{2}$	268
6. Reference	0	9	29 $\frac{1}{2}$	35 $\frac{1}{2}$	158
7. Children's	5	15	34 $\frac{1}{2}$	27 $\frac{1}{2}$	89
8. Order, Catalog and Prepara- tions	2	16	42	47 $\frac{1}{2}$	204
9. (Catalog Dept., included in 8)	0	6	23	28	95
10. Other Service Staff Members . .	20 $\frac{1}{2}$	15 $\frac{1}{2}$	38 $\frac{1}{4}$	57 $\frac{1}{2}$	554 $\frac{1}{4}$
11. Central Janitor and Building Force	13 $\frac{1}{4}$	17 $\frac{1}{2}$	26 $\frac{1}{4}$	29 $\frac{1}{2}$	240 $\frac{1}{2}$
12. Total Central Personnel	563 $\frac{1}{4}$	99	246	279	1513 $\frac{3}{4}$
13. Central Circulation (including Stations)	915,738	1,987,179	4,133,965	3,997,694	15,264,132
14. Central Circulation per Cen- tral Employee	17,136.35	20,072.51	16,804.73	14,328.65	10,083.65
BRANCH PERSONNEL²					
15. Circulation		15 $\frac{1}{2}$	49 $\frac{3}{4}$	37	306
16. Children's		0	8 $\frac{1}{2}$	17	86
17. Reference		0	1	0	15
17 $\frac{1}{2}$. Other Branch Service Staff . .	1	3	11	30 $\frac{1}{2}$	775 $\frac{1}{2}$
18. Branch Janitor and Building Force	0	2	10	24	173 $\frac{1}{4}$
19. Total Branch Personnel	1	20 $\frac{1}{2}$	80 $\frac{1}{4}$	108 $\frac{1}{2}$	1355 $\frac{3}{4}$
20. Number of Branches	1	6	37	67	206
21. Branch Circulation	28,546	386,574	2,029,838	2,235,334	22,958,990
22. Branch Circulation per Branch Employee	28,546.00	18,857.27	25,293.93	20,602.16	16,934.53

¹ The figures in lines 5-12, divided into central circulation or total population, give a fair calculating figure for estimating present typical central library staffs, by major departments, e.g., line 9 ÷ central circulation = minimum present catalog staff to provide for. But personnel as pointed out elsewhere is likely to increase much faster than population or circulation, and the proportions in Table 10 should be applied to the newly calculated totals from Tables 10 and 11.

² The majority of branches report only the total staff members, indicating the impossibility of giving valid actual or proposed number of branch circulation, reference or children's workers, because their duties generally overlap. No branch catalogers were reported. Note. Some of the inadequacies of such a table as this are discussed on the following page.

We have one basis for calculating library personnel in Table 7, namely, by taking the local population estimated for 20 years hence, multiplying by the A.L.A. standard for per capita circulation, and dividing by the A.L.A. standard of circulation per assistant. For example, a city of 60,000 population \times 9 circulation per capita = 540,000 circulation \div 20,000 = 27 employees, exclusive of building force.

But this needs to be modified in the light of Table 12. Without making allowance for failure to report every employee in a few libraries, this shows the combined circulations, populations, library staffs and building forces of 59 typical cities. In Table 11 we have combined the A.L.A. standards of Table 7 and the actual averages from Table 12 in an attempt to get a fair calculating figure for library personnels per capita and per circulation.

In the face of these conflicting results a compromise seems necessary, and we therefore propose a rough calculating formula:

1 staff member, plus 1/6 building force member, for each 2,000 population.

More detailed, Table 12 shows the total number of workers in each major category—central, branch, circulation, building force, etc. This table shows, for the first time, we believe, the proportion of central and branch to total personnel. As the total population and circulation and the number of cities (in parentheses, line 2) are also given, the personnel per population

and per circulation may be roughly figured for any category by relating it to the formula in italics above.

As noted elsewhere, tables of actual returns are always inconsistent and uneven as to related figures or series of figures, *e.g.*, lines 10 and 19. Table 12 is therefore not to be applied rigidly, especially in the apportionment of departmental staffs. The authors do not feel safe in developing new formulas from it. But rough calculations worked out from it will be more helpful than any other information that has been found. The returns from individual libraries reported in the *A.L.A. Bulletin*, each April, are most useful but are subject to some of the same considerations footnoted under Table 12. Also, they do not distinguish between centrals, branches and whole systems.

In branches and small libraries there may be no reference librarian, children's librarian, or cataloger as such, the work being combined with other work. The personnel reported in these categories for population groups 1 and 2 seem, therefore, abnormally small compared with the work and desk space required, for if, for example, the reference librarian spends her mornings as cataloger, in the small library, she should have a service desk in the reference room or alcove, and another desk in what serves as the catalog room. For this reason the librarian should take the estimated employee personnel and make a careful apportionment by departments and branches based partly on present organization and partly on Table 12.

NOTE: In using the statistical tables and suggestions in this chapter, due attention should be given the 1940 census figures as soon as released. The annual library statistics published each April in the *A.L.A. Bulletin*, should also be studied, because of fluctuations from year to year, and for additional data which help to clarify each problem.

CHAPTER 5: COMPUTING BUILDING SIZE AND COST FROM GIVEN DATA

EVERY building committee faces the problem of size and cost. How large must the new library be to provide for the increases in the bookstock, the additions to the staff and the improvements and expansions of the service which may be expected during the next twenty years, and what will such a building cost? The answers to these questions can be reached only after considerable planning and figuring, but this should be accompanied by careful study of the capacities of other libraries of a comparable size. Recently constructed buildings in cities of similar population should be visited, and their trustees and librarians questioned as to whether these buildings are adequate and where they are at fault; but the committee must be on its guard against unjustified enthusiasm and a patriotic concealment of defects and shortcomings. It is well to have a competent unbiased librarian in the general vicinity pass on the merits of any building proposed as a model, for serious mistakes have been made by following bad examples.

An aid in visualizing the new library's general size and character is a post-war post office building in a community of equal population. It cannot be proved that a post office and a library in the same city should be of the same size and cost, but in a large number of cases there is an interesting similarity in their space requirements, type of construction, amount of stock, bulk of equipment, working area, and the number of persons gathered there at any one time.¹

POPULATION AS A BASIS FOR DETERMINING SIZE

The true basis for determining a library's size and cost must be the community population. As was pointed out in Ch. 4 the population twenty years later must be estimated and the library

proportioned thereto if it is to be adequate for twenty years without need of enlargement. It was also pointed out that the population figure might be diminished if there are other library services in the same community, but that a central library's service and therefore its size is not reduced by its having branches.²

The normal size of a public library building can be derived from the estimated and adjusted population figure by either of two methods: (1) by *cost*, from standard cost-per-capita to total cost, thence by cubic-foot-cost to size; and (2) by *service*, through standard per capita numbers of volumes housed, readers seated, and volumes circulated per annum, reduced to floor area by the *V.S.C. Formula* as later described.

The cost-per-capita tables cannot be used in the case of a branch, since the exact size of the portion of the community served cannot be determined. However, the amount of service, as measured by volumes, circulation and seats can be assumed and the *V.S.C. Formula* used.

EXTRANEIOUS DEMANDS

The tendency to include a museum, a large lecture hall, or special rooms for other community activities is fortunately on the wane, though it persists in memorial libraries paid for by legacy or gift. Full allowance must be made for this in calculating size and cost. The authors suggest computing the library portion of the building by such standards as are here set up, and *then adding* to size and cost pro rata according to the bulk or floor area these outside activities require.

¹In large cities the "post office building" must be figured as that part of a federal building occupied by the post office itself and its own related spaces, not courts or other federal offices.

²Table 2 in Ch. 4 suggests the appropriate number of branches and the population to be served by each in cities of different sizes. Tables 8 and 9 in Ch. 4 give other data about branches, classifying them as is usual according to the size of their annual circulation.

TABLE 1
PER CAPITA COST OF LIBRARIES BUILT IN THE PAST TWENTY YEARS
INCLUDING EQUIPMENT AND FEES

POPULATION AT TIME OF CONSTRUCTION	NUMBER OF EXAMPLES ¹	PER CAPITA COST RANGE	PER CAPITA COST AVERAGE ²	AUTHORS' PROPOSED COST STANDARDS ³
I. Under 10,000	19	\$6.50 \$65.00	\$19.70	\$12.00
II. 10,000-35,000	11	1.58-15.60	6.90	7.00
III. 35,000-100,000	5	1.68 9.24	5.00	5.00
IV. 100,000-200,000	4	2.32 4.79	3.08	4.00
V. Over 200,000	8	.54 3.15	2.75	3.00

¹ No branch libraries included. All figures are derived from cost data secured from the libraries through questionnaires. All returns included.

² Based on population at time building was constructed.

³ To be multiplied by estimated population twenty years later.

COST-PER-CAPITA AS A BASIS FOR DETERMINING SIZE

Cost is the venerable and much respected measure of a library building, and *cost-per-capita* has long been accepted as the basis for determining its size.

The cost of the site has never been included in these calculations, though it may run as high as 50 per cent of the building cost, and may have to come out of the building fund. This cost varies with individual conditions and cannot be reduced to a fixed percentage of the total expenditure. The figures which follow do not allow for the cost of the building site. The cost of equipment (movable furniture) and the fees of architects and engineers are included in all cost tables, except where otherwise noted.

Table 1 shows the per capita cost of a number of libraries built during the past twenty years, based on population when the library was built. The authors have supplemented these average figures with standards which are to be multiplied by the estimated population twenty years hence. If officials feel that this is too short a period to provide for they should add proportionately to the costs and capacities which this book proposes.

This table shows how obsolete is the old Carnegie cost-formula of \$2 per capita for a new building. Recent per capita costs are closely re-

lated to population, with a fairly steady range inversely proportional to the size of the community. They are highest of all in the memorial libraries, most of them in communities of less than 10,000 persons. These libraries are generally built with more expensive building materials, are larger than bare necessity demands, and many of them contain exhibition galleries or community meeting rooms.

Table 2 gives the costs-per-volume shelved, readers seated, and volume circulated in these same 47 libraries, as well as in 76 branch libraries. Branch buildings are not considered in Table 1 because there can be no per capita basis for their costs.

Cost-per-volume-shelved used to be assumed as one dollar, and cost-per-seat as one thousand dollars. In other words, it was thought that there should be space for as many volumes as the building cost in dollars, and one seat for each thousand volumes.³ These standards are far too low today. The above computations of actual buildings show rising and descending scales in accordance with population and circulation.⁴ The cost-per-seat varies directly with the popu-

³E. L. Tilton, "Library planning," *Arch. Forum*, 47:497-506, Dec., 1927.

⁴Actually, only 1 of the 6 scales (columns) shows a *consistent* rise or fall in accordance with population or circulation, but this general relationship is fairly clear.

lation of the community and the size of the library, while the cost-per-volume-shelved and that per-volume-circulated shows an inverse relationship to population and building size. Relationships between building costs and size as shown by cubic-foot-costs (Ch. 10) have about the same range in both central and branch libra-

foot-cost and the total cost thus estimated. To translate cost into size, the process is reversed, the proper cost as determined from population being divided by the assumed cubic-foot-cost to give cubage which in turn is broken down into area times height. This operation is explained in greater detail toward the end of this chapter.

TABLE 2
COST PER VOLUME, SEAT, AND CIRCULATION OF LIBRARIES BUILT IN THE PAST TWENTY YEARS

CENTRAL LIBRARIES CLASSIFIED BY POPULATION	NUMBER OF EXAMPLES	PER VOLUME SHELVED		PER SEAT		PER VOLUME CIRC.	
		Average ¹	W. & G. ²	Average ¹	W. & G. ²	Average ¹	W. & G. ²
I. Under 10,000.	19	\$3.86	\$4.00	\$1364	\$1200	\$1.86	\$1.20
II. 10,000 35,000.	11	3.75	2.80	1344	1400	.84	.74
III. 35,000 100,000.	5	1.75	2.50	1744	1666	.70	.55
IV. 100,000 200,000.	4	1.39	2.28	1876	2000	.79	.50
V. Over 200,000.	8	2.32	2.00	2238	2400	.61	.43
BRANCH LIBRARIES CLASSIFIED BY CIRCULATION							
Under 75,000.	12	\$4.18		\$ 526		\$.60	
75,000 150,000.	35	3.36		643		.50	
150,000-250,000.	17	3.20		675		.30	
250,000 500,000.	10	4.36		958		.41	
Over 500,000.	2	3.12		1364		.46	

¹ All figures are derived from cost data secured from the libraries through questionnaires. All returns included.

² Figures in this column represent the authors' proposed standards, derived from standards of cost-per-capita and volumes, seats and circulation-per-capita in Tables 1 and 4 in this chapter.

ries, though one would expect branch libraries to be less expensive. The cost-per-volume-shelved is higher for branches than for central libraries because they contain fewer volumes; their cost-per-seat and per-volume-circulated is lower because they have proportionately more seats and a much greater proportional book circulation.

COST CONVERTED TO SIZE

Once the cost has been determined, an approximate cubic-foot-cost must be assumed in order to translate it into size.⁵ It is difficult to predict cubic-foot-cost, yet with all its uncertainty, experience shows that a preliminary estimate based on a cubic-foot-cost is the most reliable. Ordinarily the cubage of the building shown in preliminary drawings is multiplied by the cubic-

LIBRARY SERVICE AS A BASIS FOR DETERMINING SIZE

The results of the computation based on *cost converted to cubage* may well be checked by a second computation based on the extent of *library service converted to floor area*.

FLOOR AREA

Space for carrying on work of almost any kind is measured by floor area. In all office or loft buildings space is quoted and rented by the net square foot. In a library the number of reading tables depends upon the floor area of the room. The operation of lending books likewise requires proportionate floor space for staff and

⁵See Chapter 10 for cubic-foot-cost data.

public. Book storage is also directly related to the area of floors and galleries since it is usable only to a height of seven feet.

As a measure of requisite size, floor area therefore seems more accurate and useful than cubage. One building with high ceilings and another with low will have the same accommodations if they have the same floor area. Compare, for instance, the Pasadena and Richmond public libraries. They have the same number of seats, and Richmond's greater book accommodation balances Pasadena's greater book circulation. Yet Pasadena has more than twice the bulk of the Richmond library: 1,600,000 cu. ft. as against 700,000 cu. ft. Comparing them in floor area, the difference is not nearly so marked—47,000 sq. ft. as compared with 70,000 sq. ft.—yet Richmond is notably compact, while Pasadena is exceptionally spacious.

THE V.S.C. FORMULA

The extent of library facilities and service, and the consequent need for floor area, is determined by three elements:

V.—the number of *Volumes* in both the open shelves and stacks of the building under consideration.

S.—the number of *Seats* for readers in the building under consideration.

C.—the *Circulation* in volumes per year. For centrals this comprises the circulation for entire system; for a branch, the circulation of the branch itself. The reason is given in Ch. 4.

The *V.S.C. Formula*, which the authors wish to introduce, is based on the belief that these three elements gauge the size of a library, whether a central building or a branch, and that its requisite area is in direct relation to them. If this be granted, then in a library building planned with reasonable economy of space, the *combined area* of all floors, including basement, mezzanines and galleries, measured over their enclosing walls, may be expressed as equal to: *X* times Volumes, plus *Y* times Seats, plus *Z* times Circulation.

The letters *X*, *Y*, and *Z* each represent a cer-

tain definite number of square feet. The familiar allowances of 12, 15, or 20 volumes per sq. ft. in stack construction, and 20, 25, or 30 sq. ft. in reading rooms are insufficient because they refer to floor areas of individual rooms within surrounding walls. The values of *X*, *Y*, and *Z* must each be sufficiently large to include its proportional share of the space required for general administrative and heating services, stairs, corridors, toilets, wall thicknesses, pier-masses, etc. Their proper values can be found only by the trial and error method, assuming what seems a reasonable value for each and testing the result by comparison with the figures for recent library buildings. Many different values have been carefully tested in this manner, with results which indicate that:

One square foot is sufficient for 10 volumes housed—whether in the stacks or on open shelves, so *X* equals 1/10.

One seat requires 40 square feet, so *Y* equals 40.

One square foot is sufficient for 40 volumes circulated per year, so *Z* equals 1/40.

A statement of these conclusions in the form of an algebraic equation is the *V.S.C. Formula*:

$$(\text{Vols.} \div 10) + (\text{Seats} \times 40) + (\text{Circulation} \div 40) = \text{the Combined Area in Square Feet;}$$

$$\text{or, CA} = \frac{\text{Volumes}}{10} + \text{Seats} \times 40 + \frac{\text{Circulation}}{40}$$

When this formula is applied to an existing building, of course a variance may be expected between actual area and theoretically required area as deduced from its data on volumes, seats and circulation. Actual area is affected by the type of plan, and particularly by the relative extent of unused basement. Theoretical area depends to a degree on whether all contemplated shelving has been counted in, stack capacity assessed at a reasonable number of volumes per foot, chairs and tables set at normal spacings, and the circulation brought up to normal.

As a building ages new shelving is installed for its growing book collection, chairs and tables are placed closer together or other rooms as-

signed to readers, and its circulation grows beyond expectation. Thus Theoretical Combined Area, since it is dependent on volumes, seats and circulation, overtakes and passes Actual Combined Area.

We have accurate data from forty-five central libraries and branches of their volume capacity, seating and circulation. Their proper combined areas computed from this data are remarkably close to their actual areas in most cases; in others theoretical and actual vary as 3 to 4, or 4 to 3; one varies considerably more. The following table shows total average:

TABLE 3

ACTUAL vs. V.S.C. THEORETICAL
COMBINED AREAS

CLASSIFICATION OF LIBRARIES	AVERAGE ACTUAL COMBINED AREA IN SQ. FT.	AVERAGE THEORETICAL COMBINED AREA IN SQ. FT.
21 Central Libraries . . .	63,136	66,276
14 Branches with Basements	11,147	10,821
10 Branches without Basements	5,079	7,495

The only persistent difference is in branch libraries without basements, all in California and Oklahoma. Unquestionably this is an economical type, but it must be remembered that a basement under a building costs much less than doubling the area of the main floor, and though unnecessary in the South, it is most useful in the North. Then, too, the branches of the Southwest have no large lecture rooms to increase area without adding to library facilities.

It must not be taken for granted that there is virtue *per se* in Actual Combined Area being less than Theoretical Combined Area, or vice-versa; but a wide variance should be explainable. If the two agree fairly well a normally efficient plan may be assumed, working at a comfortable capacity, though it is true that a wasteful plan with an overworked staff and overcrowded accommodation, or else an ex-

tremely compact plan with reserve space for future tables and increased circulation, would each show an even balance between theoretical and actual area.

For example, the theory applied to the Baltimore Library results as follows:

1. Actual Combined Area, measured from plans:

$$CA = 270,000 \text{ sq. ft.}$$

2. Theoretical Combined Area, based on actual book capacity, actual readers' seats, and the last reported circulation:

$$CA = \frac{1600000}{10} + 1100 \times 40 + \frac{3120000}{40} = 288,000 \text{ sq. ft.}$$

3. Theoretical Combined Area, based on Standards in Table 4, times present population:

$$CA = \left[\frac{1.5}{10} + \frac{1.25 \times 40}{1,000} + \frac{7}{40} \right] \times 805,000 \text{ Pop.}$$

$$CA = .375 \times 805,000 = 301,875 \text{ sq. ft.}$$

The three values for Combined Area, within ten per cent of each other, are unusually close. All attempts to establish the proper size of a library must be approximate at best. The computations described are merely general guides, but are of value because they are the only guides.

STANDARDS OF VOLUMES, SEATS AND CIRCULATION

To use the *V.S.C. Formula* in computing the size of a new building the numerical value of the three factors must be decided by the librarian, or taken from standards that have been set up. These standards are, of course, ideals based on averages, hence in comparing them with data of actual libraries one may encounter large variations, in many cases as high as a hundred per cent. The American Library Association has studied this problem and its conclusions are given with slight adjustment in the following table, together with data compiled from statistics of recent buildings received by the authors from librarians and architects in answer to a questionnaire.

TABLE 4
VOLUMES AND CIRCULATION PER CAPITA: SEATS PER THOUSAND CAPITA

CENTRAL LIBRARIES CLASSED BY POPULATION	Number of Libraries	BOOKSTOCK CAPACITY			READERS' SEATS		ANNUAL CIRCULATION		
		Averages, from Questionnaires	A.L.A. Averages for 1937 ¹	A.L.A. Standards Slightly Adjusted ²	Averages, from Questionnaires	W. & G. Proposed Standards	Averages, from Questionnaires	A.L.A. Averages for 1937 ¹	A.L.A. Standards ³
I. Under 10,000.....	19	5.1	2.3	3.00	14.4	10.00	10.6	8.36	10.0
II. 10,000 35,000.....	11	1.8	2.0	2.50	5.1	5.00	8.2	8.50	9.5
III. 35,000-100,000.....	5	2.8	1.6	2.00	2.8	3.00	7.1	7.37	9.0
IV. 100,000 200,000.....	4	2.2	1.1	1.75	1.6	2.00	3.9	5.18	8.0
V. Over 200,000.....	8	1.1	.8	1.50	1.2	1.25	4.5	4.31	7.0

¹ See *A.L.A. Bul.*, Apr., 1938, for statistics.

² See Table 3, col. 3, in Chapter 4 for the original A.L.A. Standards.

³ See Table 7, col. 2, in Chapter 4 for the A.L.A. Standards.

If the standards in Table 4 are accepted, the proper size of a building as measured by its combined area can be deduced directly by the simple algebraic process of substituting these numbers in the V.S.C. equation and solving as shown in Table 5. This procedure eliminates the double task of first computing Volumes, Seats, and Circulation, and then calculating the Combined Area they require. It should be repeated

that the Combined Area thus determined applies to a building planned with average economy, without extravagant halls or stairways, and with little waste space; and that the term "COMBINED AREA" means THE SQUARE FOOT AREAS OF ALL FLOORS INCLUDING BASEMENT, MEZZANINES, GALLERIES AND STAIRS, MEASURED OVER WALLS, AND ADDED TOGETHER. Also that "POPULATION" is the number of persons predicted for 20 YEARS HENCE.

TABLE 5
COMPUTATION OF NORMAL COMBINED AREA IN SQUARE
FEET PER CAPITA

$$\text{COMBINED AREA} = \frac{V}{10} + S \times 40 + \frac{C}{40}$$

Substituting the normal V. S. and C. from Table 4, noting that seats are quoted per thousand capita.

$$\text{GROUP I: } CA = \frac{3.0 \text{ Pop.}}{10} + \frac{10. \text{ Pop.} \times 40}{1000} + \frac{10. \text{ Pop.}}{40} = .950 \text{ or } 1.00 \text{ sq. ft. per capita.}$$

$$\text{GROUP II: } CA = \frac{2.5 \text{ Pop.}}{10} + \frac{5. \text{ Pop.} \times 40}{1000} + \frac{9.5 \text{ Pop.}}{40} = .687 \text{ or } .70 \text{ " " "}$$

$$\text{GROUP III: } CA = \frac{2.0 \text{ Pop.}}{10} + \frac{3. \text{ Pop.} \times 40}{1000} + \frac{9.0 \text{ Pop.}}{40} = .545 \text{ or } .55 \text{ " " "}$$

$$\text{GROUP IV: } CA = \frac{1.75 \text{ Pop.}}{10} + \frac{2. \text{ Pop.} \times 40}{1000} + \frac{8.0 \text{ Pop.}}{40} = .455 \text{ or } .45 \text{ " " "}$$

$$\text{GROUP V: } CA = \frac{1.5 \text{ Pop.}}{10} + \frac{1.25 \text{ Pop.} \times 40}{1000} + \frac{7.0 \text{ Pop.}}{40} = .375 \text{ or } .375 \text{ " " "}$$

A CHECK FOR NEW BUILDING PLANS

It is customary for a list of all required rooms and spaces to be prepared as a preliminary program, with the extent of each given in terms of area, seats or volumes to be accommodated. This list is then used by the architect in making his sketch plans. It is well to test the sketch plans by the theoretical areas given in Table 5. This may prevent a false start with sketch plans that are far too large or too small for the community.

If the standards set up in this chapter are accepted, the guides and checks for normal cost, size and capacity are as follows:

I. *Adjustment of Population Figures:* (see Ch. 4)

Estimated size of the community in 20 years
== Population

Subtract the number served by other libraries
Reduce for an unusual number of illiterates
Increase for a probable high demand for service.⁶
== Adjusted Population

II. *Cost-Per-Capita as a Basis for Determining Size:*

Multiply Adjusted population by Cost Standard given in the last column of Table 1 == Cost
Divide Cost by Cubic-Foot-Cost as estimated by architect == Cubage

Assume the number of stories and their heights, including floor and roof construction, and add together == Total Height

Divide Cubage by Total Height
== Ground Area

III. *Library Service as a Basis for Determining Size:*

Multiply Adjusted Population by the Square-Foot-Per-Capita Standard given in Table 5
== Combined Area

Divide Combined Area by the number of stories
== Ground Area

Assume the story heights, add them together and multiply by the Ground Area == Cubage

Multiply Cubage by Cubic-foot-cost as estimated by architect == Cost

The figures derived from these operations should be considered only as rough approximations, within 25 per cent of the proper value. A greater divergence is a danger signal unless it can be credited to a definite and unusual element in the problem. The proper per capita figures are not susceptible of proof, but these formulæ and the consequent deductions seem to stand all tests we have applied.

From the foregoing, and from further statistics and analyses not yet presented, the following conclusions seem inevitable:

I. In actual practice Cost-Per-Capita varies widely from any possible standard.

II. In actual practice Volumes, Seats, and Circulation-Per-Capita, and consequently Area-Per-Capita, all vary widely from any possible standard.

III. In actual practice there is no relationship discernible between Volumes, Seats, and Circulation, the standards proposed being based only on averages.

IV. A computation of Required Area based on Volumes, Seats, and Circulation, is fairly accurate.

It is obvious therefore that if the extent of a library's work can be predicted, the proper size of the building may be approximated. In actual practice, however, communities have spent what they liked on their library buildings and built them as large as they liked, and, despite repeated attempts by the American Library Association to establish standards for library service, there has been no generally accepted system for proportioning the size or cost of a building to the size of its community. Still, the figures presented here are valuable in preparing preliminary plans and estimates, and a study of them may bring to the attention of trustees and architects many important factors which enter into the general question of a building's proper size and cost.

⁶See Thorndike reference early in Chapter 4.

CHAPTER 6: LOCATION AND PLACEMENT ON SITE, FOR GREATEST PUBLIC SERVICE

LIBRARY boards, appropriating bodies, real estate interests, city planning experts, and architects must realize that a public library building is first of all a public service plant and not a monument. The ideal site for a library building is where a large department store, a popular bank, or the busiest office building or drug store could be successfully located. It is vital to secure such a site.

Convenience to users is as important for a library as for a great office building. If, through a strategic location, a library can lend 100,000 books per year at a unit cost of twelve cents per circulation, while another library with equal zeal, every attention to method, and in a community of equal size and intelligence can do no better than 70,000 circulation at a unit cost of seventeen cents due to the handicap of a remote, inconvenient location and the consequent smaller patronage, the taxpayers of the second city are burdened by this increased unit overhead cost. But this is not so important as the fact that thousands of potential readers are not being reached with a commodity of great civic value.

DOWNTOWN CROWDS

Cincinnati central library users were quizzed, a stream of 8,000 daily in the winter season; 95 per cent had combined their trip to the well-located old library building with their downtown day's work, their day-time shopping or evening movie trip. Nearly all the remaining 5 per cent who made special trips to the library were students. Almost 1,000 readers came between 12:30 and 1:30; practically all of these were employed in downtown offices and stores. They stated that they could not use the library

¹Wisconsin Free Library Commission (Matthew S. Dudgeon, ed.) *New Types of Small Library Buildings*. Madison, 1913. p. 11.

²S. B. Mitchell, "Where shall we build the public library?", *Lib. Jour.*, 64:535-541, July, 1939.

at the noon hour if it were less accessible. No wonder officials are determined that the proposed new building shall be located for use. "The shopping district is the magnet which draws the crowd, and a library to do the greatest good must be near the charmed circle." (F. P. Hill.)

The whole viewpoint as to accessibility was well stated by Matthew S. Dudgeon in 1913: "How can any intelligent person maintain that library sites are well chosen and buildings well planned to attract the public? The site should be such as would be selected by a keen business man locating a book store. Would he locate it one or two or three blocks off the main street to get sightly surroundings? Would he put his building twenty or fifty or one hundred feet back from the sidewalk, rendering it necessary for the passer-by to make a considerable detour before even a casual inspection of his books would be possible? Would he put the main floor from four to ten feet above the sidewalk level, thus discouraging readers by a stair ascent? Would he place his windows high in the wall, far above the walk, so as to conceal the contents of the building?"¹

In large cities the site often advocated for the library is on some municipal square or at the "Civic Center," almost always removed from the shopping center, a risky and generally poor idea in spite of enthusiastic city planners who ignore the social problem of increasing book use in their desire to see an imposing and beautiful group of public buildings.²

The case for some site beyond the present business and shopping center, possibly in the path of a city's future development, is often argued with deceptive plausibility. The example of the New York Public Library, sometimes cited in evidence, can hardly be used as a parallel. In 1897, when the legislature authorized the

city to erect a library building in Bryant Park on the old Croton Reservoir site, business and shopping were plainly on the move northward. This location, being the most central and accessible on the island, especially in regard to public modes of transportation, was of immense value as a piece of real estate. The opening of the two railroad terminals in 1910, the year preceding the completion of the library building, hastened a northward march which was already certain and rapid, so that by 1915-1920 the library was coming into the very thick of the crowds. Such a case is too easily used, and has been used, to ease the minds of trustees and city officials in taking an inexpensive site that is now and always will be remote from the people who would flock to a convenient library.

The late William H. Brett, Librarian at Cleveland and a leader of library thought at his time, during a newspaper controversy in another Midwest city in 1907, wrote a letter containing the following highly significant comments:

"Our experience in Cleveland leaves no doubt in my mind that a good location is absolutely necessary to the success of the library work. The main library is situated on a side street out of the current of traffic, but not over five hundred feet from the busiest part of the city. It was formerly on the main street and was removed to this location six years ago, and there can be no question but that the change in location has been a great disadvantage.

"At the Woodland branch there was an increase of 25 per cent, due to no other cause than better location; at West Side, in spite of a beautiful new building, there was a decrease of 35 per cent, from 140,000 to 100,000 circulation per year, for no other cause than a poor location. The experience in eighteen branches and substations bore out the same observation.

"I believe that convenient and adequate rooms in a business block centrally located, if such could be had, would be unquestionably much better for the work than the best planned and equipped building possible in an inconvenient location. It

would certainly be better to take such quarters at least as a temporary expedient until the right location can be secured than to make an investment in building and land in an inconvenient location which will permanently lessen the usefulness of the library.

"We must remember that the purpose of the public library is to bring books within easy reach. We are ministering not only to those who appreciate books and will make sacrifices to obtain them, but to a much larger number who are indifferent and must be attracted, and it is certainly no less important that the masses of our citizens should be intelligent readers than that the children should be taught to read. So important do I consider a central location that I think you would be justified in paying any possible price for it."³

In the heat of a dispute between two newspapers this and similar views from other librarians were characterized by the editor of the opposing newspaper as "The pork-chops-bargain-counter theory of library culture!" He was tragically wrong. The site chosen has been a continual handicap for the thirty years since.

EFFECT OF MOVING ONE BLOCK

In 1911 the New Haven Public Library moved into a new building diagonally across the green from its old location, which was close to the post office and the city hall, and at the principal transfer point of the street railway and within a hundred feet of the busiest corner in the city. The present location is not over a thousand feet from the old and in full view of it across the park. Notwithstanding this short distance and all the attractions and interior conveniences of the new building the circulation decreased for each of the first few years.

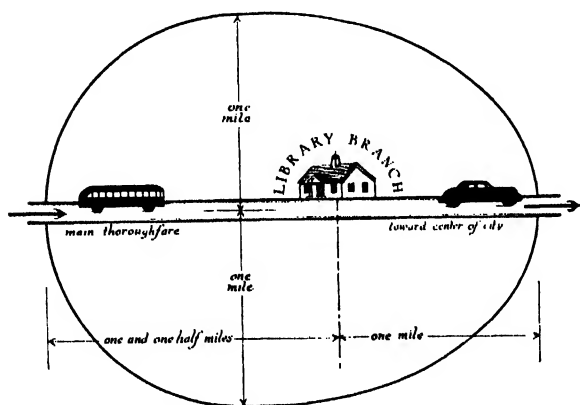
There are many other examples of the expensive results of poor library location.⁴ Such cases have led cities like Toledo, Dayton, and Cincinnati to make elaborate studies in an effort

³J. L. Wheeler, *The Library and the Community*. Chic., 1924, p. 28.

⁴*Ibid.*, pp. 27-35.

many years have noticed almost invariably that when a new branch is opened, 70 to 80 per cent of the children registered had never previously used any other branch. The proportion of new adults is somewhat smaller, for many of them visit the central library on downtown trips.

In the A.L.A. survey of 1926 (v. 3, p. 114) fourteen libraries of less than 50,000 volumes show an average maximum distance of approximately three miles between branches, and the distance which the hypothetical average reader must traverse from his home to the nearest library is a little more than one mile. Pedestrians, street car and bus riders and automobilists are reluctant to travel in a direction away from the center of the city to reach even a near-by branch.



Branch libraries will draw from an area approximately an oval, with a one mile radius centering a half mile farther away from the city, and a 2½ miles axis along the main thoroughfare. People do not like to travel away from town to use a branch.

Most branch visiting, especially by adults, is done on trips to and from the center of the town. The center of actual patronage is, therefore, always *nearer* town than is the center of neighborhood population. "A large branch serves a greater suburban area with more efficiency if it is in a sub-center of shopping about half-way between the boundary and the heart of the city."⁹

The fact that two thirds of the libraries reporting in 1926 had proved their needs by op-

erating temporary deposit or delivery stations before building suggests consideration of such factors as:

1. Distance from central library and from other branches or distributing agencies, and difficulties of getting to the proposed new location. A city may be so cut up geographically by rivers, railroads, cemeteries, or large non-residential areas that even when by the map certain blocks are only one half or three fourths of a mile from a branch library, they may be psychologically remote and may require a mile or two-mile trip.
2. Local centers of population and business; pedestrian, automobile, bus and street-car traffic routes and transfer points; location and patronage of a chain grocery, drug store or movie in the neighborhood.
3. Classes of readers to be served, their nationalities, industries, organizations, etc.
4. Nearness to school buildings which may or may not contain school libraries.
5. The isolating effect and the hazard of traffic thoroughfares on juvenile patronage. The problem of the branch is quite different from that of the central library, for few children in proportion use the central building in a large city. Several Los Angeles branches on side streets close to *but* in sight of the main street are circulating more books per square foot of floor space than branches in the same type of neighborhoods located on through boulevards. This case appears exceptional.

6. Liability of neighborhood to change in character and density of population; *e.g.*, from residential to tenement or to shops, from white to colored, from one nationality to another.

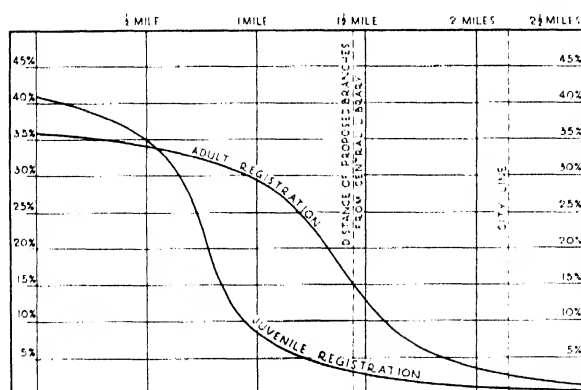
7. Ease of parking near the building. This has been advanced as a consideration. Just the contrary would perhaps be sounder, for the better the site for serving the crowd the thicker the crowd and the harder to find a parking space. One partial remedy is special parking regulations—15 or 30 minutes, perhaps, which is pref-

⁹E. A. Savage, "Distribution of book borrowing in Edinburgh," *Lib. Assoc. Rec.* 39:150-155, Apr., 1937.

crable to placing the library building on a less easily accessible site.

AT WILMINGTON

A Wilmington survey¹⁰ shows where library patrons live, by blocks and streets, and the resulting circulation at central and branches. For example, central libraries draw from widely scattered homes, even from remote suburbs, because some member of the family is sufficiently determined to use library books to make a special trip to central or to stop there when shopping downtown. Naturally, the area drawn on by a branch is much smaller in proportion. Such



Registration at Wilmington, Del., as affected by distance from the central library. The two curves show a more rapid drop in juvenile than in adult registration when residence is beyond the half mile limit; also that if both adults and children live 1 1/2 miles from the Central Library they make little use of it in a city of 106,597 population. Adult library use appears satisfactory within a radius of one mile from the Central Library, then rapidly diminishes, while juvenile use has dropped almost as much at one mile as at a greater distance.

surveys show the high ratio of borrowers per family within the half mile surrounding the branch.

Is registration a good measure of actual book

¹⁰F. M. Jones, *Library Service for Greater Wilmington . . . (Branches)*. Wilmington Institute Free Library, Wilmington, Del., 1926. See also A. B. Horvitz, "Effect of distance upon frequency of use of public library facilities," *Duluth, City Planning*, July 1933, p. 135-137. J. E. Wert's study in connection with the Chicago Survey of the Library and Public Administration is in manuscript form at the Univ. of Chicago Library School.

¹¹Donald McCormick, architect. 6 p. typewritten report.

use? It is much simpler to analyze than circulation. Wilmington's check showed that the percentage of books lent to adult and juvenile residents of the various blocks was in substantial agreement with registration.

AT TULSA

In 1930 trustees at Tulsa, Okla., asked their architect to survey local population spread. Using telephone company charts, he split the city into five areas, with the number of families as of 1928 and estimated for 1949, counting four persons per family, one and a half volumes per capita, cost of building based on \$1.50 per volume, including equipment but not including the lot. The resulting detailed figures led to recommending three branches on the west and north sides and one on the east side.¹¹

CONCLUSIONS AS TO BRANCHES

1. A branch should be easily accessible, preferably on a main thoroughfare. Its situation and exterior should call attention to its presence and its purpose. If possible it should be near a traffic junction.
2. To develop its general service to a large area a branch should not carry the name of a portion of that area or give the impression of being closely associated with merely a part of the area it is to serve.
3. A branch should have a sufficient book supply to meet the present and growing needs of the district. "In perhaps a hundred published reports of other libraries, it is a frequent complaint that 'we have planned our branches on too small a scale.'" A strong branch in the larger cities seems to require 15,000 to 25,000 books or even more. We might go further and say that in the larger cities great branches costing \$100,000 or \$150,000 with stocks of 30,000 or 40,000 volumes are not only possible but definitely should be provided where the size and type of the population give promise of lending 300,000 or 400,000 volumes a year. Fewer and larger branches would be more effective in several cities where a half century program of building branches of

somewhat uniform size has left practically untouched a number of important thickly congested residential areas where large regional branches are a crying need.¹²

4. The branch should be adequately staffed, one staff member for each 20,000¹³ circulation, plus part-time help of high school or college students to do the clerical work of charging and discharging books in rush hours. It is not difficult to estimate the number of staff members and the volume of work, whether circulation, reference, or children's, which should be built up in branches of different sizes. (See Ch. 4 and Ch. 11.)

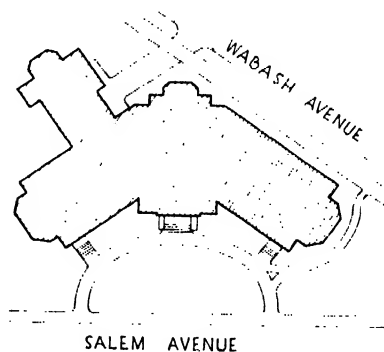
PLACING ON THE SITE

The problem of locating a library on its site, whether in a congested downtown area, a closely populated working-class area, or a suburban open area, encourages new and interesting designs and exterior treatment as well as interior arrangement. The site governs the type of plan; it must be studied to take advantage of all its characteristics.

An ideal site is at the intersection of two streets where sufficient land can be secured to give light and air on four sides. The entrance should be on the main street, for the accessibility desirable for a site applies also in placing the building upon it. A long narrow lot with small frontage and little light space at the sides is not justified in a suburban or residential neighborhood, but it would be for a central library where the location is otherwise ideal, or for a branch in a congested neighborhood. Sky-lighting or artificial light and ventilation are not a high price to pay for keeping the building where the crowds are. The York plan and certain branches at New York and Newark show how a valuable narrow site can be utilized. Chicago, Rochester, and other cities which rent ordinary store buildings and fit them for library needs have helped break down the tradition that a library must extend parallel to the street and have plenty of air and light around it.

High cost of ground means smaller area on

a floor and more floors, whereas convenience calls for public departments on the fewest possible levels. To keep adult public departments on one floor, the use of every foot of land is justified, foregoing any setback, lawn, or parking space. In an open residential district, where a branch will be visible and accessible if set back in a lawn, such a placement on the lot is appropriate. But if the neighborhood is growing and the adjoining residences old, there is danger



Dayton View Branch, Dayton, Ohio (plan in Ch. 25), utilizes this narrow angle of land by an unusual plan, in which a workroom wing runs back into the wider portion of the angle. Parkman Branch at Detroit similarly uses its acute angled plot to run its Children's Room wing out on a slanting axis with a large bow window at the point (plan in Ch. 28). The peculiar problems presented by irregular plots gave rise to many of the "V" plans shown in Ch. 25.

that stores may be erected next to the sidewalk and the library will then be eclipsed.

Many library lots are too high above street grade. One is tempted to hire a contractor to steal up on a dark night, put a steam shovel to work and excavate to sidewalk level! Then the basement can go lower still. No other busy building in these days is perched at the top of a flight of steps. In residential neighborhoods or small towns a lot sloping upward requires special study, involving objectionable, expensive approaches. A lot that slopes from one side to the

¹²Ralph A. Ulveling, Administration of branch systems, in C. B. Joeckel, *Current Issues in Library Administration*, p. 135-162. Univ. of Chic., 1939.

¹³See discussion in Ch. 36, on branches.

other is a difficult site for an important central library, but where balance about a central axis is not required it may be used to great advantage. A basement entrance or even a basement room above grade may be placed at the lower end.

A lot which falls away from front to rear is a great asset; a rear basement above grade with separate approach affords an additional well-lighted space, perhaps for a beautiful children's room or at least staff work rooms, or merely an accessible receiving and shipping department.

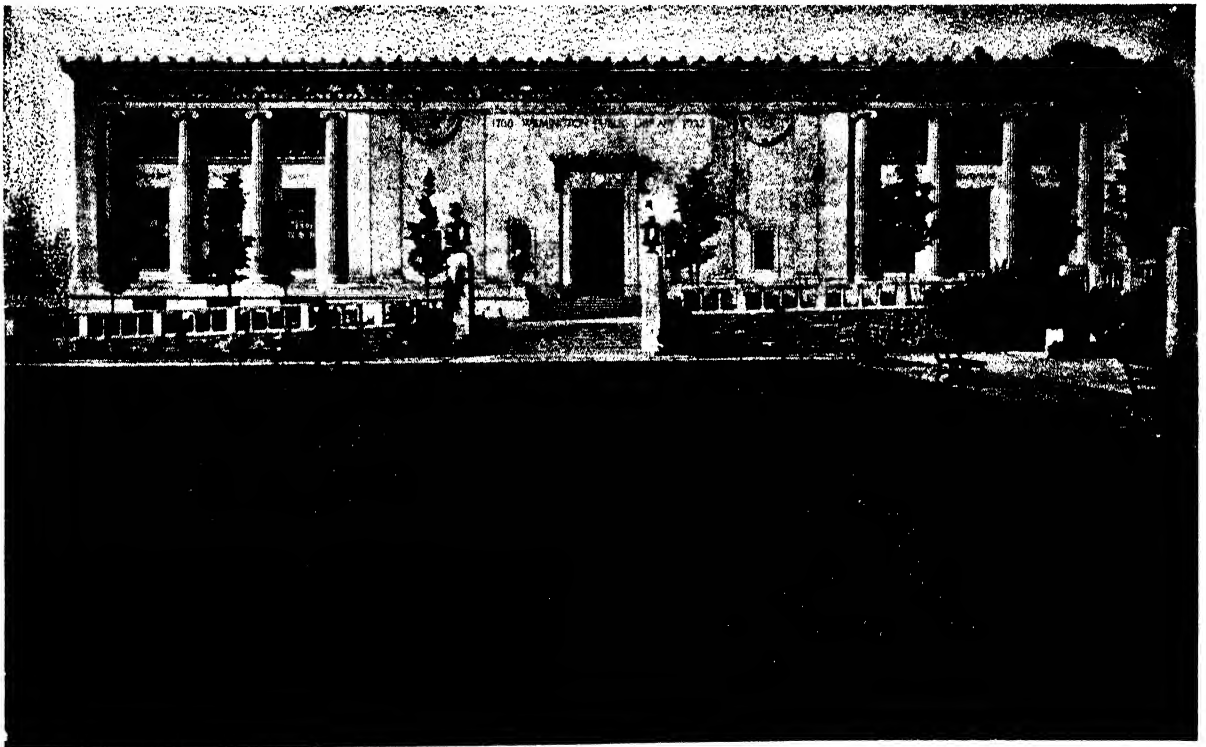
Other things being equal, avoid a site involving expensive rock excavation (foreseen by borings) or one with a tendency to be wet and requiring unusually thorough waterproofing or

¹⁴"Planning gardens for branch libraries." *The Library* (Newark, N. J. Library Bulletin) 4:11-12, June, 1931.

a concrete "mat" to counteract water pressure. Such conditions may all be satisfactorily overcome but at a great cost.

ATTRACTIVE GROUNDS

The opportunity to surround the small town or suburban building with appropriate lawn, shrubbery, and other growing things, will not be overlooked in spite of the desirability of having the building and its entrance very convenient to the sidewalk.¹⁴ A small front lawn is desirable in a village library or a suburban branch, especially if an obligation will be assumed by the park board or village trustees or some garden club or civic group to care for it at no expense to the library. Where there is space and public interest of this substantial sort, beautiful grounds will be sought after.



Wilmington Public Library. A plot sloping down to the left, counteracted by the use of different material for basement walls with a strong moulding above them, to form a horizontal support or base for the upper architecture. Entrance to Children's Room at left end. E. L. Tilton and A. M. Githens, architects. 1925.

CHAPTER 7: BUILDING OPERATING COSTS AS A FACTOR IN LIBRARY PLANNING

THIS CHAPTER can be only a brief summary, with reference to material available elsewhere. Those familiar with operating commercial buildings must be conscious of the waste and inefficiency in the operation of the majority of public buildings. The object of a separate chapter on this topic is to attract the attention of librarians and trustees to the fact that it costs money to keep a library building in use; just as much attention needs to be given to economy as if it were a store or other privately owned business building.

SOME OPERATING COST FIGURES

Figures on library building operating costs gathered in 1936, from 51 out of 81 cities asked, show that cubic foot operating costs evidently have nothing to do with the size of the city or size of the building in cities of 100,000 population or more, where at least one full-time janitor is employed. The attention, or lack of attention, to operating economy is strikingly contrasted in a number of recent large libraries. It is this contrast which focuses emphasis on the great need for studying probable operating cost while planning the building and its equipment. Evansville, Ind., for example, operates at .7 cent per cu. ft. per year, Houston at .6 cent, both of them including building-staff wages, heat, light, and supplies; and Baltimore, with a capacity of 4,500,000 cubic feet, has \$36,000 total annual operating cost, or .8 cent per cubic foot¹ including building-staff wages, heat (central steam piped in), light, ventilating, air conditioning (for 3,000,000 out of the 4,500,000 cu. ft.) on 20-25 days each summer. Queens Borough's cost is 3.8 cents and Washington's 3.9 cents, while two of the largest buildings in the country, erected since the war, have never been willing to furnish any cost figures and probably run

higher than any figures on file. Taxpayers have a distinct interest in these facts and so do trustees, who are responsible for the plans and decisions which affect the result. So above all do librarians, who have to see thousands of dollars go into building operating costs while their budgets are sadly inadequate to employ large enough service staffs, buy books, and meet reader demands.

WASTES IN OPERATING COST

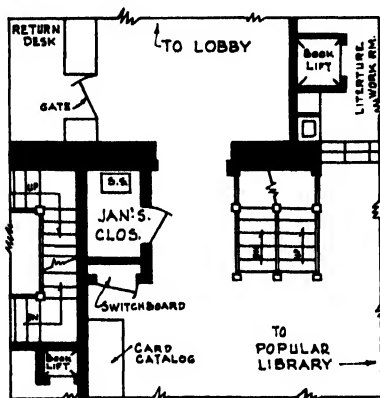
1. Some buildings are old and poorly equipped; the complicated elaboration of rooms, of decorations—even of woodwork—all handicap attempts at economy.
2. Overelaborate and wasted space in general, especially in halls, stairways and show spaces, domes, ill-designed skylights, with their heating, lighting and cleaning, or, "the fine lawn which half our townspeople feel is essential to a library, but which is a permanent charge on future budgets."
3. Excellent but elaborate ventilating and conditioning equipment placed in the hands of incompetent engineers and run at high cost.
4. Building staff appointed for any reasons other than efficiency.
5. Building staff too elaborate; e.g., white-collar men where overall men would be more useful; janitors and mechanics not sufficiently busy with one trade or division of work, where two or three trades or types of work could be combined in one competent man (but if not competent, he naturally would cause serious hazards and

¹Office building operators keep figures on a square foot basis. Baltimore's library cost is 22¢, the national average office building cost is 52.3¢ per square foot for all building service staff (cleaning, elevators, etc.) and supervision, plus heat, light and power. See Nat'l. Assoc. of Building Owners and Managers. *1938 Office Building Experience Exchange Report*, p. 12.

breakdowns and costly repairs). The responsible person will naturally call in competent help in emergencies.

6. Poor supervision, lack of drive, or lag in work caused by protection, by favoritism, or the impossibility of breaking through a certain type or interpretation of civil service rules to discharge indifferent or mediocre workers.

7. Inconvenient placing or lack of janitor service points. There should be a slop sink on each level, with connections for mop-trucks, electric cleaning, waxing and polishing machines, also



For saving time, a janitor closet is highly desirable close at hand, on the main floor, but screened from public view, with slop sink, floor outlet and space for cleaning equipment; in larger libraries for mop-truck and floor polisher.

provision for quick access by cleaners, via stairs and elevators, and for saving steps to all the materials and equipment they use.

8. Waste in heat—high temperatures, windows opened while furnaces overheat, empty rooms not shut off, etc. Both fire and water elements of heating plant must be kept clean and tight, while the staff must understand methods of ventilating rooms during cold weather.

9. Waste in light—shades down, dirty windows, dirty blinds or skylights, too many electric lights, too high wattage, dirty lamps, and switches not turned off. Adequate number of circuits and convenient switching are essential.

10. Carelessness and theft in supplies, lamps, etc.

Adequate locked spaces and cupboards conveniently located, and accountability of the custodian are suggested.

FACTORS IN ECONOMY

Primary factors in reducing local operating costs are: (a) careful estimates by building engineer; (b) effectiveness of building superintendent or head janitor; his own knowledge, energy, initiative, supervisory ability and freedom from the handicap of mediocre job-holding helpers protected by civil service rules; (c) interest of librarian or assistant in this aspect of library welfare, realizing it cannot be handled independently of other library activities and that it competes with public services as a draft on total library budget.

The building staff, with its hourly contacts with the library assistants, must be interested in the purpose and services of the library and be impelled by the same morale and devotion to the public good. The point is made here because it has a direct bearing on operating cost; there have been cases where city officials have dictated janitor appointments, either with or without civil service, which proved unfortunate by introducing men with a discordant or indifferent attitude.

CASES

City X; with a fine building of 600,000 cubic feet, a single efficient janitor sufficed for several years to keep things in good shape with temporary help each summer on cleaning books and shelves, and emergency winter help on snow, etc. The Librarian supplied a bit of oversight and encouragement. A new administrator soon had a building force of three men of the typical job-holding sort without zeal or skill, with results no better than before at more than double the labor cost.

City Y; an inefficient branch janitor with no mechanical bent was replaced by a new employee at \$15 per month more. He took care of all repairing at his own branch and considerable woodworking and furniture repair for several

others. His suggestions on use of new types of fuel saved a fourth in annual heat cost.

City Z; a new trustee studying library expenditures noted that the type and size of lamp seemed inefficient; result, 28 per cent saving in electricity, with a smaller annual burn-out of lamps.

Bridgeport; six branches heated by oil burners thermostatically controlled. A central janitor combines book deliveries with a daily check-up at each branch to see that all is well. A mechanic is called for emergencies. Branches open daily Monday to Friday from 1 to 9 P.M.; on Saturday from 9 A.M. to 1 P.M.; charwomen work four hours a day, five days a week, and must be out by 1 P.M.; on Saturdays two hours, 7-9 A.M. From 7 to 9 P.M. there are no janitors to help maintain order; police when called respond promptly. Branch assistants open and close the branches with rarely any trouble; charwomen proud of clean buildings, supervised by branch librarians. For six branches, janitorial costs run: Six charwomen, 24 hours a week each at 40 cents an hour; Snow removal done by local boys at 25 cents an hour; Supervision by central janitor—15 minutes a day (charged to book delivery); Maintenance of grounds by central janitors; 2 men one-half day a week in summer (none in winter); Repairs by central janitors, or by municipal maintenance bureau.

See Chs. 37, 38, 39 for further discussion on building materials and equipment which affect operating.

In several cities living quarters have been furnished for janitor and family in the central or

branch libraries. *Pros*: free space available; janitor on call at nearly all hours, with some of the advantages of a night watchman; lower salary or a better man, on account of free living quarters. *Cons*: numerous complications, visitors during or after library hours (noise, cooking odors, inappropriate conduct, etc.); such janitors feel they are rather permanent fixtures, not amenable to the usual criticisms and restrictions. A janitor on call 24 hours a day is greatly tempted to be lax on schedules and duties for the regular day's work. "A dangerous suggestion, expensive in the long run." Yet the plan works with the right person. Successful in many smaller buildings, it might not be in larger.

Extensive suggestions on the organization, methods and materials for building operating and maintenance are available in McComb's *Public Library Buildings*, so that details need not be duplicated here.

REFERENCES

- D. Q. McCombs, and M. O. McCombs, *Public Library Buildings*. Los Angeles, 1935. See Chs. 5, 6, and appendices, pp. 103-136, 308-325.
- W. L. Davis, "Page the Janitor!" *Wis. Lib. Bull.*, 28:207-11, July, 1932.
- H. A. Frommelt, *Church Property and Its Management*. Milwaukee, Bruce Pub. Co., 1936.
- R. G. Newman, M. A. Bartlett, D. E. Thompson, *Janitorial Service in Small Libraries*. Pittsfield, Mass., R. G. Newman, Berkshire Athenaeum, 1938.
- C. E. Reeves and H. S. Ganders, *School Building Management, the Operation and Care of School Plants*. N. Y., Teachers College, Columbia University, 1928.
- The files of *Buildings and Building Management* magazine contain a wealth of ideas and experience on every aspect of operating and upkeep.

CHAPTER 8: ARCHITECT AND TECHNICAL ADVISORY SERVICE

BEFORE an architect can plan a building he must thoroughly understand what is to happen within it, the nature and work of each department, and the relationship of each department to every other. His training in school, in atelier and in practice teaches him to find a workable solution for a given problem in planning, to arrange the rooms of a building in such relation to each other that their activities can be carried on efficiently. But first he must clearly understand these activities. He has a right to demand a clear statement of requirements; it is the duty of trustees and especially of the librarian to furnish it. They must teach him and he must learn the functioning of a library before he begins his first sketch plans. This book may help in clarifying the problem.

If there is no librarian when the building project is started one should be appointed at once. Delaying this until plans are completed will burden him with various details of arrangement sure to interfere with his policies and scheme of administration. It will be a severe handicap to the architect, who must rely only on his own judgment and the non-technical advice of the board of trustees. "The board should first select the librarian (in a newly established library), second the architect, third choose the site, and then plan the building. The reason for such procedure will be obvious." (J. T. Jennings.)

Every building that houses an organization of any sort is first and perhaps principally a problem in arrangement. In other words it must be planned not only to be gracious in its entrance and pleasant in the relationship of its rooms, but to function with the highest efficiency possible. This seems evident, and though not always considered of first importance in the past, is now generally conceded. Dr. Melvil Dewey's dictum "Plan from the inside out," refers to

²See *A.L.A. Bull.*, 31:799. Oct. 15, 1937.

this, but with the mistaken impression that it is usual for an architect to design the front of a building before arranging the floors. The floor plans are invariably studied first, and the exterior designed to fit the floor plan and "express the plan," as the architects' vernacular has it. For a hundred years or more the École des Beaux Arts has taught this sequence, all the American schools teach it, and if the architect sacrifices plan arrangement to the exterior, he has gone astray and forgotten his training.

So assuming the architect is equal to the task, the real danger today is in not properly informing him what the building is to house, in presenting him with a confused and fragmentary "program" or schedule of requirements, and in not explaining to him the organization. He must understand the relationship of catalog to desk, to reading room, to cataloging room, and so on; the routing of a book from order department to shelf; the work at the desk; the many little requirements, such as the special need of space at the children's entrance; the many dangers, such as the apparently harmless little saddle at a doorway, or a change of levels between rooms with two innocent-looking steps. Some of these things he must know before he begins his sketches, others before the working drawings are sent out for estimate.

The librarian must furnish him information at the proper time. It is not necessary and is often harmful to present the architect with a plan. "Give us your problem, not the solution of the problem," Mr. James Gamble Rogers begged his audience at a recent library conference.² Each party interested should express his own ideas, should listen sympathetically to the ideas of the others, and weigh them carefully. Where the ideas originate is of no consequence; the result is all that matters. Sincere interest on each one's part is assumed, but the need is COOPERATION.

STUDY OF THE DRAWINGS

The librarian and members of the staff should study each successive sketch and the contract drawings and details issued later, otherwise misunderstanding and trouble follow. This seems obvious, yet strange to say it is generally neglected. As the building proceeds there are so many detailed drawings that the architect cannot afford to furnish blueprints of all of them to the librarian. A special fund and instructions may be necessary to secure frequent blueprints, supplemented by visits to the architect's office from time to time to keep in touch with what is being done.

ACCESSORIES

An architect is intensely concerned with the finished appearance of the building, and therefore in the choice of accessories that combine to make up the entire effect, such as the planting and paths, the furniture, its placing, the hangings and rugs, and colors of the walls. He senses the building as his own creation, his own child as it were, not a means of making money. When the building committee, perhaps not feeling justified in paying a fee for advice in selecting these accessories, proceeds to install them without consulting him or even notifying him, he feels it as an affront. We suggest as a proper courtesy in such a case that the architect be notified of exactly what is intended, and not too late for any suggestion he may make to be considered.

PROCEDURE

Size and cost must first be determined. Ch. 5 gives standards of cost and capacity for communities of different sizes. There must be a map of the site, the grades or levels of the surrounding streets and their comparative importance, the position of large trees, and the depth of sewers.

A schedule of rooms should follow, or better, a list of contents of the various spaces, such and such subjects in the reading rooms with the number of seats in each, how many books should be on "open shelves" available to readers, how

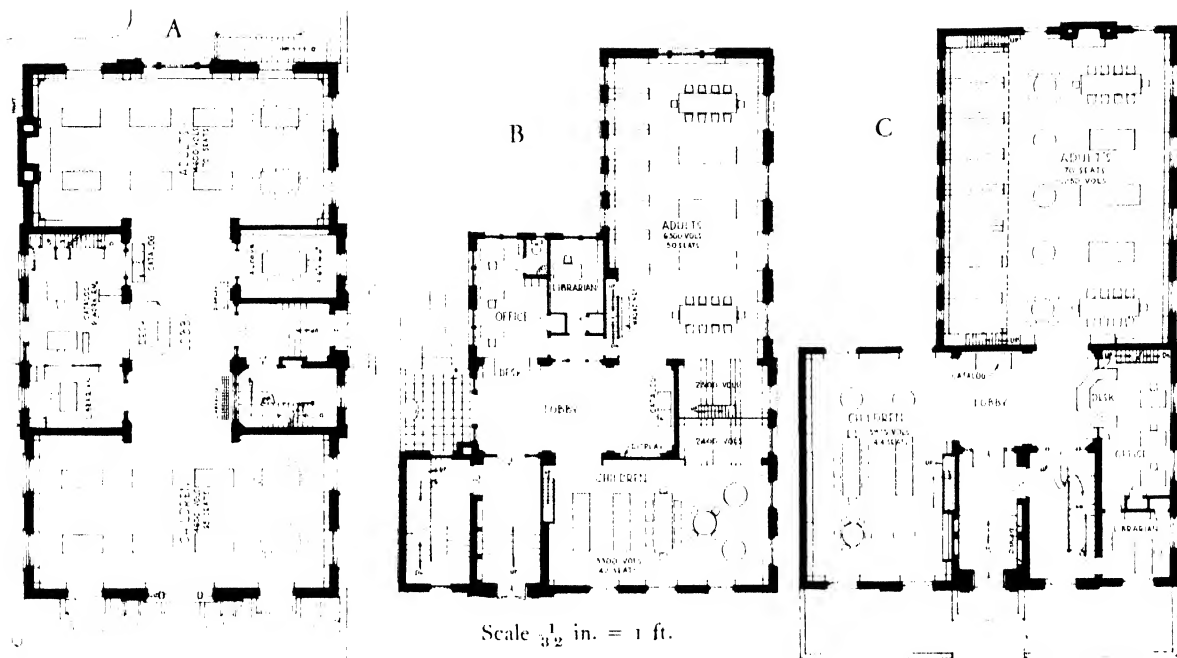
many in the stack. Such a list should be complete. It may be modified from time to time as circumstances require, but it is a good starting point. Ch. 11 gives a check list that may be useful.

Next, any peculiar wishes should be mentioned, such as the desire for a building capable of rearrangement, or the avoidance of structural partitions between the rooms; the possible desire for study-carrells within the stack; or the desire to have the librarian's office near the entrance and very accessible to the public, or remote and next to the workrooms; particularly any special characteristics different from the usual.

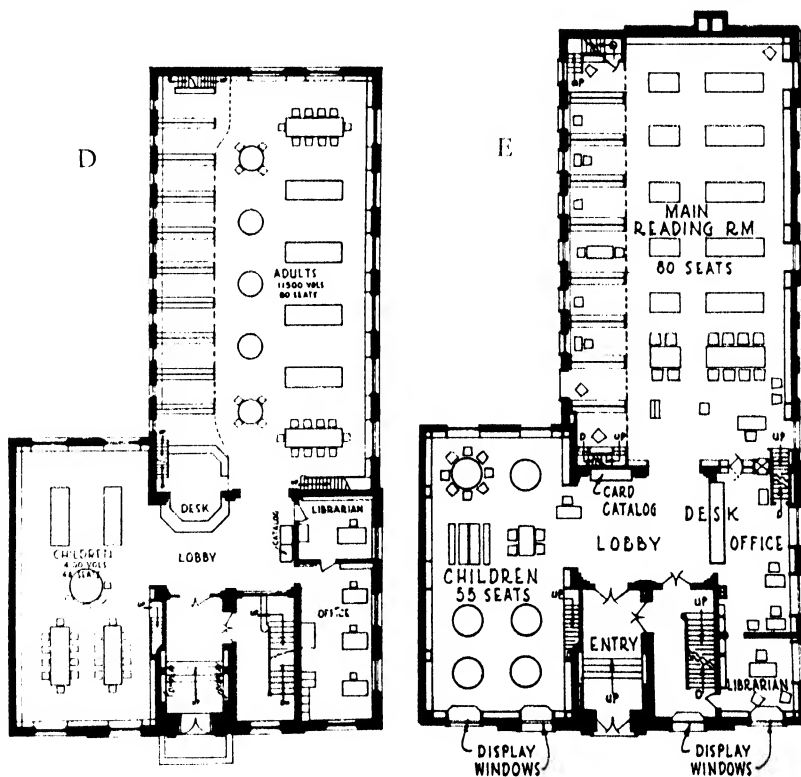
With this information and a rough knowledge of the locality the architect begins his first sketches. He tries out every possible general arrangement. He may elect to discuss with trustees, librarian, and adviser (if there is one) each of the sketch plans that seems to have possible merit, or, to avoid confusion in their minds, he may prefer to make the decision himself and present only the one he considers best. The choice between these two courses may depend on whether the trustees and librarian read plans easily, whether they are familiar with library plans, or whether there seems danger of difference of opinion among them or a stubborn and unreasoning insistence on accepting some one particular arrangement with a latent and incurable fault.

The architect's elementary questions about the functioning of a library imply his open-mindedness and not that he is ignorant and so unfit for the work. Complete frankness between architect, trustees, and librarian there should be, with no tendency to avoid discussion and criticism. We know of at least two instances where the building committee instructed the architects not to confer with the librarian, but only with them. The architects wisely ignored these instructions.

It is well if all concerned keep each other advised not only of actual progress but of changes in their own personal ideas, of new fac-



Five stages in plan development at York, Pa. This city of 65,000 had only \$100,000 for its building (should have been \$200,000), and an excellent downtown corner lot. After the architect had developed plan "A," with entrance on side street, a librarian advisor suggested entrance from main street as at B. In plans B and E the building comes to sidewalk. The chief problem was economy of structure and utilizing every inch for more book and reader capacity. Note shifts in work space, increasing correlation of service and work elements with readers, and growing reader and book capacity, from A to E, utilizing mezzanine and basement space. But the whole building was too tight and is badly overcrowded. Specialists from a neighboring large library helped in planning, but the trustees should have appointed their own trained librarian at the beginning and found twice as large a building fund. The children will probably have to be moved upstairs, or better, to a new two-story addition at the rear (upper end) of the lot, with entrance of their own, releasing space for more reference work. (F. G. Dempwolf, architect, J. L. Wheeler, advisor, 1935.)



tors relating to public opinion, and of legal, financial and political problems. The group then works as a unit. The committee chairman has the difficult task of keeping all in a cooperative state of mind, seeking a common goal—the most beautiful and convenient building possible within the appropriation.

The librarian will take as active a part in the entire project as his knowledge of library arrangements, general planning, building construction and material allows. He will keep trustees, architect and city officials apprised of each others' plans and decisions. Many librarians have initiated the chief ideas in arrangements and, in a few cases, certain esthetic elements in the design. The librarian must take the lead in the preliminary discussion with the trustees of what rooms to include, their location and relationship to the others.

Naturally he will have strong convictions about various details. He must transfer his ideas into the architect's mind, there to be accommodated to a whole flock of other problems of which the librarian knows practically nothing—shapes and forms, proportions, heights, passage space, relation between stories, stairways, structural and engineering elements, the general esthetic design. The architect must decide which suggestions he may accept, subject of course to the trustees' approval, but his building will be more successful as a library if it reflects the working knowledge of the librarian and library staff. In the planning of one successful building the librarian was in touch with the architects almost daily for five years, and there was a constant flow of ideas back and forth, shared by each member of the library staff and of the architect's staff as well. Department heads often worked in direct conference with the draughtsman assigned to the particular detail being developed.

FURNITURE LAYOUT

As soon as the projected outlines of the various rooms have been sketched a helpful procedure is to develop a series of "furniture layouts." The

readers' tables and chairs, card cabinets, service desks, special furniture, and the like should be indicated by the librarian at proper scale in a set of pencil plans or blueprints that can be under constant development by the staff, with the help of a member of the architect's staff. As a result many weaknesses of the plan itself may be discovered. The architect must be influenced by the recommendations that result, and the staff must keep up with the changes made in the architect's office in dimensions of rooms, location of stairs, elevators, conduits and piping, electric outlets, and other features of the building generally overlooked by librarians. The layout plans are drawn on tracing paper, blueprinted from time to time and distributed to the librarian, architect, and engineers for heating and electric work. This is covered more fully in the furniture chapter, 42.

GATHERING IDEAS

Architects, librarians, and trustees should make continuous studies, trying to draw ideas from every possible source until the building is finally completed. They will not hesitate to copy, but should challenge the soundness of an idea as applied to the local problem.

There is nothing essentially wrong or unwise in copying features of an existing building, but to follow the right copy in the right place and do it successfully requires almost as much knowledge and skill as to invent and originate. Some of the weaknesses of public library buildings have been perpetuated through unwise selection of a model. In recent years the copying of the stereotyped rectangular plan for the smaller libraries has prevented the originating of exterior designs and interior arrangements which might have been more effective and of a refreshing novelty. It is well to avoid especially (*a*) copying for one group of users a type suited to the needs of a different group; (*b*) using the shape and outlines of the interior divisions and departments of a large building for a small one; (*c*) imitating a type suited to a different climate. Southern libraries and their patrons

have suffered considerably from plans and types of construction suitable to northern climates only. Copying with understanding and judgment is preferable to the errors and oddities resulting from an attempt to be original without discrimination.

ARCHITECTS OR LIBRARIANS AS ADVISERS

The planning of a library is an intricate matter. It is too much to expect anyone in the few months while a library plan takes shape to master the intricacies of a complex and rapidly developing subject in which only a few architects and librarians are fairly competent after a lifetime of study and practice. Libraries increasingly follow the practice of engaging the services of a competent adviser, either an architect who has specialized in libraries or a librarian who has had considerable experience in planning libraries and seeing library building projects through to their completion.

Most businessmen agree that technical advisers are well worth the cost. It is an evidence of good judgment and no reflection on the intelligence of trustees to call in an experienced adviser before starting sketch plans, thus preventing unnecessary expense, inefficient service, and lasting regret. Demands for help have forced the A.L.A. to form a Committee on Library Architecture and Building Planning which may be called on. The various manufacturers of library apparatus are frequently asked to help outline a problem or criticize sketch plans. Such services deserve compensation, but a fee is seldom accepted.

Consultants or advisers are particularly important at the earliest stage. The situation must be analyzed, the size and location of the proposed library discussed, and the list of departments and services made. All this is a prelude to sketch plans. If trustees and librarian can do this alone, well and good; but in most cases the more experienced a librarian is, the more he values consultation. Consultations begun at a later stage, though valuable, start at a disadvantage. After working on the arrangement of a

plan until it has become familiar it is human nature to regard it as well nigh perfect, when to a fresh eye it may have many shortcomings. A delicate matter, this bringing in an adviser at a later stage! Human nature in both architect and librarian will resist any major change proposed. They are put on the defensive; it is their plan, and it is attacked. Then, too, the architect is rather apt to resent it as an affront to his dignity; unfortunate this, and unreasonable, for no one knows all there is to know on any subject. It is far more effective to start with the adviser at the very beginning, all working out the scheme together. In the esthetics of the problem an adviser might be intrusive, for this is more a matter of individual preference and taste.

ASSOCIATED ARCHITECTS

If there is a consulting architect he is necessarily associated with the local architect, unless he merely analyzes the problem, makes his report, and goes his way. Usually the association continues till the building is finished or at least until the preliminary drawings are approved. Terms are used loosely. Together they may be styled associated architects, or the local member the architect and the other the consulting architect, or the local member the associated architect and the other the architect.

This scheme of associating is increasing in favor with the growth of community spirit since the war. Formerly it was the usual custom to choose the architect thought best fitted to design the particular building in question, no matter where his offices were, and to retain him for the entire services with a clerk-of-the-works (as he is technically called) to superintend construction and render regular reports to the architect. If his office is in a far distant city, he might send one of his more capable draughtsmen or associates, after the work is under contract, to live near the building and take active direction. As with fees, this whole matter should be frankly discussed in advance.

College libraries are free to go far afield to

select their architect, but public libraries, usually municipal projects, are apt to retain a local architect whether experienced in library building or not. Hence the need of an associate. The local architect usually handles all business transactions, supervision of construction, and general details. The consulting architect leads in arranging the plan to conform to library requirements and may carry the chief burden of design, interior, and exterior. Either architect may prepare the contract drawings and specifications. They should consult together frequently. They should fairly share the credit for the design, though generally the local member receives the major local credit, despite his attempts to divide it.

ARCHITECT'S SERVICES AND FEES

The American Institute of Architects has issued two leaflets describing the architect's principles of practice, services, and proper charges.³ The trustees should send for them at once. His work in general consists of "the necessary conferences; the preparation of preliminary studies, working drawings, specifications, large-scale and full-size detail drawings; the drafting of forms of proposals and contracts; the issuance of certificates of payment; the keeping of accounts; and the general administration of the business and supervision of the work."

His proper charge for this is 6% of the cost of the completed work, though certain municipalities have reduced it by law to 5%. It should be more than 6% if the building is very small or if the work is an alteration to an existing building. His clients, the municipality or library trustees, technically known as "the owner," pay also for the special engineering services on heating and ventilating, plumbing, and electric work; for surveys and title searching; for borings if required to determine the nature of the soil, possible rock formation, or the presence of underground water; and for travel expense, long-distance telephone calls and telegrams; part of the blueprinting; and if the size of the building warrants it, for a "clerk-of-the-works"

to superintend construction. These items often amount to a considerable sum.

The fees and extent of service should be frankly discussed with the architect by the library and public officials, determined clearly, and included in a contract or exchange of letters at the outset. The standard A.I.A. form of agreement⁴ is a good basis for a contract, but there is no clause requiring the architect to revise his drawings or specifications without extra charge should the final contractors' estimates exceed a stipulated limit of cost.

ADVISER'S AND CONSULTANT'S FEE

There is no definite conventional fee for either a librarian as adviser, or for a consulting or associate architect.

A librarian adviser generally charges on a per diem basis, usually from \$25.00 to \$100.00 per day plus travel expense, depending on his experience and the size and difficulty of the project. His services are analytical, his experience invaluable in clarifying the problem and in assisting the librarian and trustees to determine the program of building requirements, its location, and its proper size, in criticizing and analyzing the architect's sketch plans as to their effectiveness for the library services, and in suggesting new possibilities of arrangement.

As the duties of a consulting architect vary in different cases, so the fee varies. It may be at a per diem rate but is usually a percentage of the building cost, since the work is similar to that of the local architect, with diagrams, sketch-plans, sketches of the exterior, and perhaps rough cardboard models. The division of fees

³*Professional Practice of Architects: Details of Service to be Rendered, Schedule of Proper Minimum Charges.* Washington, D. C., rev. 1922 (A.I.A. Doc. 177). *Principles of Professional Practice*, Washington, D. C., rev. 1935 (A.I.A. Doc. 225). Both may be obtained on request (enclosing postage) from the American Institute of Architects, Washington, D. C.

⁴*The Standard Form of Agreement Between Owner and Architect . . . When Percentage of the Cost of the Work Forms the Basis of Payment.* 3d ed. Washington, D. C. c. 1926. Obtainable on application, with five cents in stamps enclosed, to the American Institute of Architects, Washington, D. C.

between local architect and consultant should be in proportion to the work done by each. If the local architect prepares drawings and specifications he should receive the regular established fee for full services, and the fee of the consultant should be paid by the owner according to his services.

In general the schedule of payment on account outlined in the A.I.A. *Professional Practice of Architects* heretofore mentioned, is a fair proportional division of the amount of work involved:

Preliminary Drawings	20%
Contract Drawings and Specifications	40%
Contracts, Details and Supervision of Construction	40%

This may be used as a basis for assuming proper consultant fees, but a total fee of six per cent is not sufficient to divide between architects and consultants. The two office costs are more than if all the work were done in one office. The community has specialized service and should realize it.

SPECIAL ENGINEERING SERVICE

In addition to the mechanical engineering service for electric work, it is not unusual to retain an illuminating engineer as a consultant for the artificial lighting of the building. This is a new development caused by the rapid advance in methods of lighting, briefly reviewed in Ch. 38. Only a specialist can keep abreast of it.

Before working drawings are begun it is wise for the owner's fire-insurance broker to go over the sketch plans. A lower rate may result.

Essential criticism of a more general sort may be obtained from those who operate office and commercial buildings, where cost in building and operating is always to the fore. Such a factor cannot with justice to the taxpayers be overlooked in a large library. The National Association of Building Owners and Managers, at Chicago, maintains a building planning service in which a group of specialists on heating, lighting, ventilating, elevators, materials, janitorial supervision and the like, are drawn together to

criticize newly prepared plans. The enlistment of their services through the local chapter, if there is one, seems sensible. In one large city where this was carried out, a special appropriation was made by the city to bring seven such advisers for a forty-eight-hour series of conferences, previous to which each had received a set of blueprints for preliminary study. Changes and eliminations resulted amounting to an estimated saving of \$30,000 or \$40,000 in the cost of the building and a corresponding saving in the cost of operating year after year. Though this procedure may be too elaborate and expensive for smaller cities, similar results may be obtained by calling on men proficient in their various parts of the problem in the home town or some near-by city. Generally such persons feel they are rendering a community service and will not always be disposed to make a charge for their time. Public service corporations such as the local companies furnishing electricity and gas have similar services though usually their advising engineers are not so thoroughly trained and experienced.

ARCHITECTURAL COMPETITIONS

Because of the public character of most library projects, trustees and city officials may feel constrained to "give everyone a chance" and be reluctant to take a definite stand in favor of one architect, no matter how competent. Someone will suggest that any architect interested be invited to submit his ideas to the trustees in sketch form for consideration. The absurdity of this is obvious. How can anyone evolve a design that would meet the peculiar conditions of a particular library organization, on a particular site, without having given serious analytical study to all matters involved in the particular case? How could a group of laymen tell whether these particular conditions had been met and the problem inherent in them solved to best advantage? The American Institute of Architects recognizes this and disciplines any member entering such an unfair and irregular contest.

The situation has been met by a formal pro-

cedure that minimizes these evils and is approved by the Institute. But whether a competition for a library building is ever wise is a question, even for a very large building.

Arguments in favor of a competition are:

1. Fair play and an equal opportunity for all.
2. Different men at work on the same problem will probably develop most of its possible solutions, and the best can be chosen.
3. New and brilliant solutions may come from younger men unknown to the committee.

Arguments against it are:

1. Delay and expense.
2. Danger of an incomplete program, for it is solely on this basis that the plans will be developed and the award made.
3. Delegating the selection of the architect to a jury of fellow architects, perhaps on the basis of a plan solving the problem according to the program, but one which librarian and trustees may not like. The librarian should not be a member of the jury because the jury cannot consider any information or instructions that are not contained in the program and must base their decision on the information the competitors have and no more.
4. Danger that the members of the jury may not know the library problem sufficiently and select a plan that will not function properly.
5. If the competition is open to any qualified architect and a great number of competitors is likely, the ablest architects may not enter since there is a probability of gaining nothing and losing prestige.
6. Danger of selecting a brilliant but inexperienced man incapable of properly carrying out the many important details of the particular building operation in question.
7. Danger that a competitor may be guided by brilliant men he has retained especially to work on the competitive drawings; and on winning, the competitor may carry out working drawings with his regular staff that may be quite unable to develop a building with the excellence of the competitive drawings.

8. The possibility that not one sound solution might be presented, so the jury would be required to give the award to an inferior design with the hope the author would change it before contract drawings were begun.

9. During the progress of the competition the competitors have no opportunity to collaborate with the librarian, thus preventing an exchange of ideas essential to the proper development of this highly specialized problem in its early stage.

These arguments have proved partly valid on both sides. A competition can be successful only if based on a well-thought-out program and conducted according to the A.I.A. standards. All architectural competitions of recent years have been based on this procedure, which attempts to insure fair play among competitors and safety to the owners. A group of experienced architects acts as jury. A competition may be open or limited to invited contestants, or a compromise between the two, but it must be governed by these A.I.A. standards. Otherwise architects of good standing will not enter it, and its defects will show as it proceeds.⁵

The adviser called for by these standards is a necessity. He is either an architect or one of the faculty of a school of architecture. He must know the library requirements. He conducts the competition. He must thoroughly analyze the particular problem under consideration and prepare a detailed program stating the conditions of contract between owner and architect, the exact drawings demanded and their scale, and the complete list of rooms and departments required, their size and the peculiarities of each. So the adviser himself completes the first stage of the architectural work, and the success or failure of the competition and of the completed building depends on his wisdom, his architectural experience, and his thoroughness.

⁵Trustees can obtain full details of this improved procedure and leaflets describing it through application to the architect acting as chairman of the local sub-committee of the Committee on Competitions, A.I.A. His name and address can be obtained by writing to the American Institute of Architects, The Octagon, Washington, D. C. It is his duty to supply all documents and information.

CHAPTER 9: PLANS, SPECIFICATIONS AND CONTRACTS

THE ARCHITECT draws sketch plan after sketch plan, trying out this arrangement and that, first at a small scale, then at larger, discussing them with librarian, board, or building committee. When the relative dispositions of the principal areas are tentatively decided, he draws sketch elevations and sections through the building from front to back and side to side to establish the relative height of stories and the general appearance of the interior. Succeeding drawings become more and more definite. Perhaps a general scheme proves faulty, is discarded, and a fresh start made. As the architect's sketches approach a satisfactory arrangement, the heating and ventilating systems are outlined in rough shape to make sure there is space for boilers, fans, steam-mains, and the ducts for incoming fresh air and exhaust air.

Finally, when the best possible scheme seems to have been developed, a direction from the Trustees to proceed with the working drawings and specifications is in order. The first stage is over.

WORKING DRAWINGS

Now the work becomes exact and technical. Structural and mechanical engineers are engaged by the architect with the building committee's approval. Conferences with the committee and librarian should continue, for countless minor changes are developing from day to day. The architect's final plans, elevations, sections and a few typical details are accurately drawn to scale and carefully traced, either in pencil on tough tracing paper, or in ink on transparent "linen" (tracing cloth), as the architect elects. Simultaneously in the engineers' offices the steel or reinforced concrete structural drawings and the *A.I.A. General Conditions, FORM A2*, obtainable at many business establishments, or on application at 35 cents per copy from the American Institute of Architects, The Octagon, Washington, D. C.

mechanical drawings for the plumbing, heating, ventilating, and electrical work are in preparation. In a large building each trade has its own plans. In a small building all may be shown on a single set.

SPECIFICATIONS

Specifications are in progress while the working drawings are being finished. They are a statement of, first, the general conditions under which the work shall be done, and second, an accurate and lucid description of all material and workmanship entering into the building.

The A.I.A. publishes a standard form of "General Conditions"¹ with which the architects and builders are familiar, but for some obscure reasons many municipalities have forms of their own which are apt to be difficult to construe. The clauses that usually cause the most trouble, not included in the A.I.A. Standard Form, are those that deal with Temporary Light and Heat. This is only a warning; a discussion of them is too involved to undertake here; the difficulty is common to all building operations and to alterations in particular.

The "or equal" phrase generally required in public building specifications is another source of dispute. In some localities the conditions of the competitive bidding may be satisfied by limiting the objects or material to the products of only three manufacturers; in others the object or material must be described at length, perhaps mentioning a particular brand or product by name as a standard, but permitting nothing in the description that will confine it to one maker. In case of bookstacks it is a safeguard to specify that the stack manufacturer shall prove that he has executed, within the last ten years, bookstack installations of the type called for, of equal or greater magnitude, and equal in quality to bookstacks manufactured by

and here insert the name of three of the best makers. In all branches of construction, manufacturers of high repute will assist owner or architect in wording the specifications so that competition is open to the makers of good material only.

APPROVAL OF CONTRACT DOCUMENTS

When complete, the drawings and specifications are submitted to the building committee for approval, subject to the approval of the local building department and any other bureau that may have jurisdiction.

A careful review by librarian and building committee is very important yet usually slighted, for at this stage all are impatient to "get the plans out for bids." This is the last chance to correct misunderstandings. One architect made it a practice to read aloud the entire specifications from beginning to end to the assembled building committee and librarian, but as a meeting of minds it accomplished little for gradually the attention of the audience wandered; they drifted into an almost hypnotic state; words lost their significance; the company dozed. However, if the owners will not examine what they are getting, the result must be accepted or changed later at possible extra cost.

CALLING FOR BIDS

Blueprints of the approved plans and specifications are made ("plans" as thus used denote the plans, elevations, sections and a few scale details as well, all of them together forming the "working drawings" or the "contract drawings") and are issued to the contractors for estimate, either to a group of "general contractors" for the entire work, as is simplest in a small building, or, in case the building is larger or local laws respecting public buildings require subdivision, to several groups of contractors, for "general construction" and for each of the mechanical trades of "plumbing," "heating and ventilation," and "electrical work."

Two or three weeks are allowed for estimating. Then the estimates or "bids" are opened and

read aloud to the building committee or board, generally at a public meeting. Subsequently the work is awarded to the lowest responsible bidder of each group. The fitness of each bidder, financially and technically, should be passed upon when blueprints are issued to him, to avoid the embarrassment of excluding a low bidder after he has gone through the work required to prepare his bid.

In case of a building paid for by public funds, the details of procedure are governed by law. If local regulations permit, it would be desirable to limit the list of bidders to those who have satisfactorily completed buildings of similar size and general type.

In case of a building paid for by private funds, the procedure may be altered. Occasionally the builder is chosen without competition because of his high standing, and his building costs are repaid plus a percentage or a fixed fee agreed upon as his profit.

Before construction is allowed the plans must be filed with the local building department, such modifications made as they demand, and their approval obtained. This is all done by the architect, often while the plans are being estimated on by the various builders. Addenda are issued to all of them in accordance with the building department's demands. The changes are not apt to be great for the architect usually has gone over the incomplete plans informally with the department.

Of course it is highly desirable that all this be done before the bidding starts, and the inordinate impatience to start work before details are all studied and completed should be resisted.

BIDS TOO HIGH

The bids when received may all be too high. The architect has done his best to assess the probable cost, but it is only guesswork, though founded on his experience and that of others, on a study of fluctuating cost, and on the opinions of his engineers and of friendly builders. Cubic-foot-cost is his soundest basis for esti-

mate; this is discussed elsewhere, in Ch. 10 particularly.

The bids on which the contract is based should total somewhere in the neighborhood of five per cent below the available funds, to allow for minor extras and omissions in drawings and specifications and for desirable changes during construction. Some local boards insist this contingency fund should be ten per cent; much under five is dangerous.

If all the bids are too high a difficult situation develops. There are two courses open.

The first is to reject all bids, revise the plans and specifications and call for new bids. This is not unusual but is objectionable, not only through the loss of time involved but because the contractors know each other's bids. A system of cutthroat bidding may follow where each one attempts to send in a figure under the appropriation and just below where he thinks his competitors' figures will be. The more reliable and conservative firms may drop out of the bidding entirely, and the affair may become a scramble among the least desirable. Of course if the bids are all far too high, this is the only possible course.

The second course is to close with the lowest bidder conditionally on his bid being reduced to a figure within the funds available. The other contractors may resent it; the local laws may not permit it if the building is to be paid for by the municipality, but if they do the adjustment can best be made by omissions of material and finish and by changes in material. Marble can be changed to limestone, rubber-tile flooring to battleship linoleum, bronze to iron, and so on. The interior finish of basement or of certain upper rooms may be omitted, outside terrace walls discarded, carved decoration erased. The architect makes up a list of alternates in specification form and the contractor states what credit allowance he can make for each. The

²*A.I.A. Agreement (Owner and Contractor, Stipulated Sum, Form A1)* obtainable at many business stationery establishments, or by application with 15 cents per copy desired, to the American Institute of Architects, The Octagon, Washington, D. C.

committee then selects such of them as are acceptable and the contract is made on that basis; or, to be within the law, the contract for the original bid and a supplementary credit change order may be executed simultaneously. Legal procedure varies with different communities.

ALTERNATES

The architect if he is wise foresees the possibility of this situation and includes in his original specifications a series of "alternates," each describing the omission of some element, or better the change of some material for a cheaper material. So with his "base bid," each contractor presents a credit estimate for each of the alternates, and by accepting certain of these the amount of the contract can be adjusted to come within the appropriation.

Alternates that describe finer material can be called for also, but this is not usual. The PWA regulations for instance will not allow this, and furthermore insist that the credit-alternates be numbered consecutively and accepted in their established order until the bid is reduced to the funds available. This is to prevent the possible acceptance of only certain alternates, selected so that a favored contractor's adjusted bid may be the lowest.

THE CONTRACT

The A.I.A. form of contract² is widely used, is familiar to most builders and architects, has been developed and polished through years of study and experience, covers almost all conceivable situations, and is a safe document. However, the larger municipalities have their own forms that must be used for public work. They all differ.

The contractor, whether for general construction or for one of the mechanical trades, has based his bid on a compilation of bids made to him by others ("sub-estimates") for various portions of the work, adding thereto his estimate of the cost of such work as he intends to do himself, the cost of his bond, his liability and other insurance, and what he decides is a reasonable

profit. Soon after the contract is signed, he "places" his various "sub-contracts" for excavation, foundations, stonework, etc. The contract or specifications should provide that each "sub" shall be acceptable to the architect, to prevent "subletting" to firms doing inferior work or selling inferior material. It is then the architect's duty to investigate each "sub" proposed. On private work, lists of acceptable "subs" may be sent by the architect, with the plans and specifications, to the general contractors who are making up their bids. Occasionally it is required that the list of sub-contractors and the amount of each of their bids be furnished by the general contractor on signing the contract, to prevent his "shopping around" later for new sub-contract bids from firms doing inferior work at lower figures than those on which the estimate was based, and to protect the sub-contractors against "chiselling," or having arbitrary reductions demanded of them. It raises building costs slightly, but better work is apt to result.

FURNITURE AND EQUIPMENT

The contract for general construction usually includes the steel bookstack, wooden bookshelving built against the walls, and flooring material other than rugs and carpets. Electric fixtures, charging-desks, window shades, and all movable furniture are classed under the general name of furniture and equipment, and are usually taken up after general construction is under way. Specifications are subject to the same difficulties as the construction specifications. The material is of such variety that it should be called for under a series of separate bids, for under a single bid the contractor becomes a general agent and it is difficult to control the "shopping around." Yet it is convenient to receive all bids for equipment at the same time so the total cost will be known. A letter of wise advice on this subject from the Federal Emergency Administration of Public Works is quoted:

"It is our suggestion that rather than advertise for bids covering only a portion of the equip-

ment, bids be taken on all groups and contracts awarded as follows:

"The Owner invites sealed bids on furniture and equipment. The list of articles required is divided into groups *a, b, c, d, e*, and *f* inclusive as listed. Unit price for each article in each item is requested together with the given total for the number of articles required in each item based on the unit price mentioned.

"Bids will be compared on the basis of the totals of the schedule of quantities comprising all items in the particular group upon which a bid is made at the unit prices bid for these items. This contract will be awarded to that responsible bidder on each particular group, *a, b, c, d, e*, and *f*, aforesaid, whose bid so determined totals the lowest number of dollars.

"The owner reserves the right to award this contract on the basis of the grand total bid for each group, or to make an award on the basis of an adjustment by increase or decrease in various items according to group not exceeding a change of more than 15% in a particular item, the adjustment being based on the unit prices in the bid, providing always that the adjustment will not change the relative standing of bidders. Separate awards by items will not be made. The award will be made to the lowest responsible bidder, without preference being given to any of the articles named as standards over equivalent articles offered.

"In the event there is a discrepancy between unit prices and the extended totals, the unit prices shall govern. In the event that there is a discrepancy between the unit prices or the extended totals written in words and written in figures, the unit prices or extended totals written in words shall govern. No bid will be accepted which does not contain a unit price for every item contained in any one group as shown in the proposed form."

ADDITIONAL SUGGESTIONS

The foregoing procedure and the course of construction is much the same for a library as for any other public building, and it seems unnec-

essary to describe it further in a book devoted to public libraries. We have given warning of the more usual difficulties. Three additional cautions, however, might be given both trustees and architects:

1. Be sure to determine in advance just what are the state, civic, town, country, PWA or other governing regulations and routine for public work and follow them exactly (particularly in every procedure that seems unimportant), in the exact wording of the "General Conditions," in "Form of Contract" (making sure, however, that all the subjects contained in the A.I.A. contract form are covered in either contract or in general conditions), in the number of copies of each letter sent to the official desiring them, and in the exact procedure for change-orders and the like. Much unnecessary friction is saved thereby. Small issues may well be conceded, lest when large issues develop there should be an accumulated antagonism to overcome.

2. In making contracts for personal services, be it with architect, engineer, clerk-of-the-works, or anyone else, be sure there is a clause permitting a dissolution of the contract with fee for services pro-rated to time of dissolution.

3. Strive to make every document and drawing express clearly what is intended, so there is no possibility of misunderstanding or dispute.

CASES

An architect in the Southwest writes: "The law requiring that a contract must be awarded to the lowest bidder compelled us to accept a contractor not only incompetent but unscrupulous. In spite of my objections and the misgivings of the Board he was awarded the contract. I succeeded in getting the Board to appoint a Clerk-of-the-works, which probably saved having the build-ings completely ruined. But every time his salary

voucher was issued, the auditor refused payment, only to be forced by the Board finally to make payment. The contractor turned out to be nothing but a broker. He never gave the work to my satisfaction, and the bonding company had to pay several thousand dollars to bring the whole thing to a wind-up. I spent many a day in court for the following year until the mess was finally cleared up."

One librarian wired to another answering questions arising from local difficulties: "Advise that general contract include plumbing, heating, wiring. Light fixtures could be separate but save disputes and maybe local politics by including lump sum allowance in general contract based on preliminary estimate. Wooden shelving if built in should be in general contract but carefully specified and drawn in detail to show construction, panelling and figure. Recommend include steel stacks in general contract because numerous connections with other building parts. However, you should be assured work by one of four experienced major companies. If insurance against jacklegs difficult would recommend separate contract assuming city officials cooperative. Recommend separate contracts for movable furniture and miscellaneous built-in woodwork and equipment."

The Los Angeles branch building specifications are given with introductory comment in D. Q. McComb, *Public Library Buildings*, 1935. Specifications for West Toledo Branch may be borrowed from the Toledo Public Library. Those for the building and furniture and the volume of drawings for furniture of the Baltimore central building, total three volumes, may be rented from Enoch Pratt Free Library for one month for 50 cents each. For more elaborate general specifications see: H. R. Sleeper, *Architectural Specifications*. N. Y. 1940. \$10.00.

CHAPTER 10: CUBIC FOOT COST AND COST BREAKDOWN

IN THE SKETCH plan stage there is no better way to indicate what a building will cost than to multiply its bulk by its probable *cost per cubic foot*. As successive small-scale drawings are made, the architect computes the bulk or *cubage* of each set, multiplies it by the figure he assumes as the probable *cubic-foot-cost*, and so knows whether or not the total cost of the building is likely to be within the building fund. Experience has taught him what the approximate cubic-foot-cost should be. The method is far from exact, but it is the best one possible until plans are developed in sufficient detail for estimating the cost of each element—masonry, steel, heating plant, finish, etc.—and adding these together to reach a new and more accurate total. This *cost breakdown*, however, is generally confined to the mechanical installations of heating and ventilating, plumbing and electrical work. For construction proper, the probable cost on the cubic foot basis is usually the sole guide until actual estimates are received. A complete cost breakdown made before the contract plans are finished is apt to be no more accurate than the far simpler computation by cubic-foot-cost.

There is no exact agreement on what to include as cubage. It is usually taken to mean the accurate bulk, counting up from the finished basement floor, or else from a foot or more below this floor to allow for basement floor-fill and simple foundations. The cost of unusual foundations requiring much rock excavation or pile-driving is generally added to the building cost rather than included in the cubic-foot-cost. The cost of land, grading and planting, and of financing a loan or the interest on bonds are never included in the building cost; these must be added to it, with such other unexpected items as are listed at the end of this chapter, and come out of the total appropriation.

While architects invariably quote cubic-foot-cost as of buildings alone, librarians generally include cost of equipment (or movable furniture) and architects' and engineers' fees.¹ A librarian's figure is therefore some ten to twenty per cent higher than an architect's figure for the same building. This difference is regrettable and gives rise to much misunderstanding. In view of this fact, the authors have endeavored to give the cubic-foot-costs according to both systems in parallel columns (see Table 1).

The building fund for most public libraries is barely adequate so must be spent judiciously. Economy comes from careful study and from discussion, preliminary criticism, and a cooperative effort to *find* economies. This is of course impossible when the architect is urged to speed up the completion of either his preliminary plans or his working drawings.

Cubic-foot-costs should be carefully kept at the minimum—unless funds are abundant—through simplicity of form and structural design, the use of economical materials, and the elimination of expensive ornamentation, particularly in stonework and plastering.

In many libraries, sorely needed space has been sacrificed for luxury of finish. Several of the Boston branches exemplify this all too common diversion of building funds from their proper purpose of providing sufficient space for library needs. They were too small from the start. Plainer outlines, cheaper materials and construction, a simple façade, and the omission of a public meeting room could have secured more usable space essential for true library services without increased cost. As it was, bookcases soon

¹J. A. Lowe in his *Small Public Library Buildings* (A.L.A., 1939, p. 17), the most recent library publication in this field, includes construction, fees and incidentals, but not furniture or equipment in the determination of cubic-foot-cost. This is halfway between the architects' and the usual librarian's systems.

had to be removed from the stack rooms to less convenient places and tables installed to meet the demand for reader space.

A question frequently asked is why libraries exceed schools in cubic-foot-costs. The reasons

are: (1) there is a tendency toward expensive material, (2) libraries are usually smaller than schools and lack the repetition of parts which always lessens cost, (3) they are generally more elaborate in design, (4) stack and bookshelv-

TABLE 1
CUBIC FOOT COSTS OF RECENT CENTRAL AND BRANCH LIBRARY BUILDINGS¹

LIBRARY		TOTAL COST OF BUILDING ONLY, AND CUBIC-FOOT-COST ARCHITECTS' SYSTEM		COST OF FURNITURE AND FEES, AND CUBIC-FOOT-COST LIBRARIANS' SYSTEM	
<i>Eastern and Central Cities</i>					
1927	Philadelphia, Pa.....	\$5,344,000	\$.89	\$754,400	\$1.02
1925	Cleveland, Ohio.....	3,950,000	.90	996,000	1.12
1933	Baltimore, Md.....	2,008,000	.45	242,000	.50
1940	Toledo, Ohio.....	1,245,000	.43	199,000	.53
1927	Birmingham, Ala.....	628,000	.54	109,200	.63
1923	Wilmington, Del.....	488,000	.60	47,300	.72
1926	Highland Park, Mich.....	404,000	.71	55,800	.80
1939	Fort Worth, Tex.....	341,000	.42	51,000	.48
1924	Knight, Providence, R. I.....	330,000	.76	38,500	.90
1929	Aliquippa, Pa.....	330,000	.85	36,500	.97
1932	Evansville, Ind.....	298,000	.40	26,000	.43
1931	Lake Forest, Ill.....	217,000	.66	48,300	.75
1940	Concord, N. H.....	185,000	.60	27,200	.69
1931	Winchester, Mass.....	153,000	.54	19,800	.61
1938	West Hartford, Conn.....	132,000	.60	21,400	.70
<i>Eastern and Central Branches</i>					
1925	Monteith Branch, Detroit.....	189,000	.59	23,800	.67
1932	Hall Branch, Chicago.....	113,000	.47	10,000	.51
1930	West Toledo Branch, Ohio.....	111,000	.43	10,200	.47
1931	Mattapan Branch, Boston.....	73,000	.61	11,200	.72
1932	Faneuil Branch, Boston.....	57,000	.58	8 100	.67
1931	Liberty Heights Branch, Springfield.....	32,000	.28	3,000	.31
1939	Oakley Branch, Cincinnati, Ohio.....	15,500	.29	5,000	.38
1924-	Six Small Libraries				
1929	<i>North and East</i>	Average,	.58	Average,	.67
1927-	Nine Small Branches				
1932	<i>North and East</i>	Average,	.49	Average,	.54
<i>Southwestern Cities</i>					
1927	Pasadena, Calif.....	551,000	.34	73,200	.39
1933	Austin, Tex.....	123,000	.34	22,000	.40
1939	Redwood City, Calif.....	70,000	.34	8,500	.39
1935	Ponca City, Okla.....	69,000	.28	14,000	.33
<i>Southwestern Branches</i>					
1919	La Jolla Branch, San Diego.....	32,000	.34	10,000	.44
1927	La Pintoresca, Pasadena.....	29,000	.24	7,000	.29
1928	Ocean Beach Branch, San Diego.....	15,000	.47	3,500	.58

¹ Source of Data: Questionnaires sent to librarians and architects.

ing are costly, (5) study of economy in school construction has been carried farther than in libraries (because schools are closely similar in type of plan and provide more examples as a basis of study), and (6) the public is used to an efficient functional type of building for its schools and demands something more than this in its libraries.

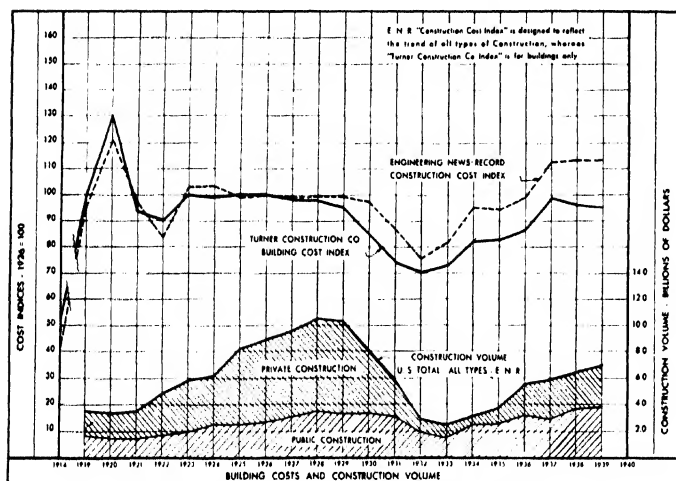
similarity ceases. While Baltimore carefully strove to reduce cost by avoiding expensive architectural detail and by spacing steel economically, the Philadelphia library with its long colonnade, wide interior spans, great central stairway, and elaborate ceilings, is evidence in itself that little attempt was made there to reduce cost. However, there was another element as important as any in causing one unit cost to be twice the other: the time of construction. Contracts for the Baltimore library were let when prices throughout the country were abnormally low and work scarce, with builders and factories so eager to keep their organizations intact that they were willing to take the work at any cost and hence sent in extremely low estimates. This was really an abnormal period.

PERIODIC FLUCTUATIONS

The enormous fluctuations in building prices which occur from year to year, and sometimes from week to week, greatly influence building costs. For instance, the medium cubic-foot-cost of central library buildings in the northern states was 80¢ in the 1920's, and only 57¢ in the 1930's. The cost figures in the former period ranged from 62¢ to 90¢, while those in the latter period ranged from 45¢ to 66¢. These fluctuations in building prices through the post-war period, appear in the accompanying graph.

REGIONAL VARIATIONS

Influence of locality on cubic-foot-cost is shown in the regional graph. The median for central libraries is 68½¢ in the northern and eastern cities and only 34¢ in the southwestern cities. Costs are higher in the metropolitan areas of New York, Boston, and Chicago than in the South and West. For instance, in Atlanta and New Orleans, costs are only 75 per cent of what they are in New York, and those in the Southwest are almost as low. In addition to varying



COST INDEX AND VOLUME OF CONSTRUCTION

Fluctuations in Building Cost During the Post-War Period.²

VARIATIONS IN CUBIC-FOOT COST

Table 1 shows clearly the great range in cubic-foot-cost. Some of the more important elements which affect it are:

- The economy of design
- The type of construction
- The materials used
- The quality and design of finish
- The extent of mechanical installation
- The locality
- The scale of prices prevailing at the time
- The amount going on construction

The public libraries of Baltimore and Philadelphia may be cited as extreme examples of cost-variation in the same section of the country. Both these large central libraries are in important cities, both are of good material and workmanship, and they are about on a par with respect to their mechanical installations. Here the

²Dow Service figures show a sharp dip in building cost for 1933, fifteen points lower than the *Engineering News Record* curve which is otherwise matched.

with locality, building costs are also affected by the size of the city, being lower in small communities.

CONSTRUCTION AND FINISH

That these are the principal causes of different cubic-foot-costs is obvious, but no formula can be given. However, we quote a report on small New England libraries:³

1. Strictly fireproof; with masonry partitions, metal doors, windows and interior trim and concrete, slate or tile roof covering. (The cost is justified only in some treasure house, like the Morgan Library in New York City.)

per cu. ft. \$.54

2. So-called fireproof or "first class" construction; with wooden doors, sash and moldings. (To all intents and purposes as safe as Type 1.)

per cu. ft. \$.46

3. Semi-fireproof; with stud partitions but masonry floors and outer walls and spark-resisting roof covering. (At present not much more expensive than Type 4.)

per cu. ft. \$.42

4. "Second class" construction; with wood framing but masonry exterior. (The boiler room should be fireproof.)

per cu. ft. \$.38

5. "Third class"; wood framing and exterior. (Not justified except in the smallest country communities.)

per cu. ft. \$.28

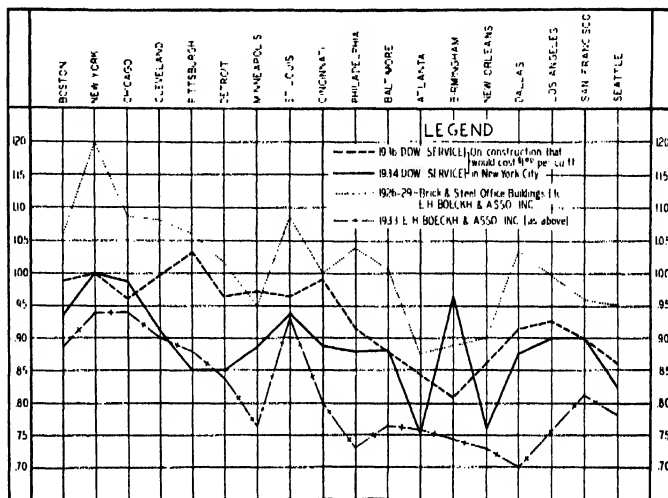
Loring's figures, worked out according to the usual architects' system,⁴ were published in a period of abnormally low costs (1932) and would need considerable readjustment today. However they do indicate the proportional variation in cubic-foot-cost, the strictly fireproof with best quality of material and finish being almost twice as expensive as the all-wooden type.

³C. G. Loring, "The small public library." *Arch. Record* 72:61-68, July 1932.

⁴"These figures do not include the land, furniture, draperies, seeding and shrubbery, or the architect's fee. They do include the cost of grading out to the sidewalk and within 20 ft. of the building, the concrete paths and gravel service drive, also the built-in bookshelves and glazed exhibition cases and the lighting fixtures." (*Ibid.*)

THE BUILDING FUND

Many a building project, strange to say, is undertaken with only a hazy idea of the amount of the building fund, what expenses are to be covered, and whether or not any portion can be used for other purposes than those specified. States and municipalities appear to be particularly lax in this regard. After the final prelimi-



Regional Variations in Building Costs; Twenty Large Cities.

nary drawings for the Virginia State Library were approved by the State and working drawings ordered, the authorities decided to cut more than \$200,000 from the building fund. When the new Brooklyn Central Library was nearly completed, the city proposed that \$30,000 of the building fund be set aside for salaries of the city building inspectors. Confusion and anxiety resulted, but the city finally charged this to an other fund.

The Public Works Administration asks for a definite statement of the proposed allocation of funds before work is begun. This is called a "Control Estimate." From time to time as the work proceeds, and as bids are obtained and contracts let, revised control estimates are issued. Thus all parties know exactly where matters stand and what funds are available for additions, modifications, and corrections of errors or omis-

sions. This course is recommended to all building committees.

The construction of the small library at Roselle, N. J., offers a good illustration of this course of action. On announcing their grant, the Public Works Administration wrote (Oct. 21, 1936):

"The basis upon which an allotment was made in connection with the above mentioned docket is as follows:

Preliminary	None
Land	None
Construction and equipment ..	\$42,055.00
Engineering	2,500.00
Legal, administrative, and overhead ..	400.00
Miscellaneous	500.00
TOTAL	\$45,455.00
PWA loan	\$25,000.00
PWA grant	20,455.00
	<u>\$45,455.00</u>

A revised estimate should be submitted promptly, together with a statement indicating the amount of funds which the Owner proposes to furnish as his share of the cost."

The architect accordingly prepared the contract drawings with the intention of keeping the cost within the specified \$45,455.00. His own preliminary estimate was:

General construction	\$30,500.00
Steel	1,500.00
Heating	4,000.00
Plumbing	1,500.00
Electric	2,500.00
TOTAL	\$40,000.00

When bids were opened and contracts let, a revised control estimate was sent the PWA in accordance with contract amounts.

With each change order the control estimate was brought up to date. The final one, on completion of the building (October 15, 1937), reveals the following cost breakdown. Furniture

is not included as it was purchased from another fund.

1. Preliminary.....		\$187.91
2. Land and Right-of-way.....		-----
3. Construction		
General	\$32,214.73	
Steel.....	811.00	
Heating.....	3,662.00	
Plumbing.....	1,635.74	
Electric (including fixtures).....	2,996.00	
	<u>\$41,319.47</u>	
Incidentals		
Additional bookcases....	\$ 18.75	
Venetian blinds.....	136.00	
Curtains.....	70.00	
Planting.....	268.12	
	<u>\$492.87</u>	\$41,812.34
4. Architect and Engineers		
Architect 6% of \$41,-		
812.24.....	\$2,508.74	
Engineers 4% of \$8,-		
293.74.....	331.75	\$2,840.49
5. Legal and administrative.....		476.80
6. Interest.....		750.00
7. Miscellaneous.....		-----
TOTAL.....		\$46,067.54

PWA grant	\$20,455.00
Bond issued by the Borough.....	25,000.00
Contributed by the Borough.....	612.54
	<u>\$46,067.54</u>

COST BREAKDOWN

What proportion of the total building cost should be allocated to each of the major subdivisions? This is hard to say, for figures vary widely. The principal causes for variation are differences in the types of heating, the possible introduction and extent of ventilation and air-conditioning, the extent of electrical installation including telephones, elevators, book conveyors, and the like, the elaboration of decorative detail inside and out, and differences in the construction materials used. This matter must be left to the architect, who fully realizes that, despite his experience and best efforts, his estimate is little more than a prediction.

A general breakdown which has been widely

quoted is the following, published by the late E. L. Tilton in *Architectural Forum*, Dec. 1927.

General construction (exclusive of metal stacks)	57%
Plumbing, heating, electric wiring and fixtures	13%
Metal stacks, wood shelving and equipment	20%
Architects' fees and allowance for contingencies	10%
	100%

This breakdown is on an unusual basis, for metal stacks and wall-shelving are now generally included in the contract for general construction, though there are distinct advantages in following the Tilton system. The authors find the allowance of 13 per cent for all the mechanical trades insufficient now because of the demand for better facilities. Convincing proof of the present inadequacy of this figure may be found in

Table 2, which presents a cost percentage breakdown for a number of post-war library buildings.

The figures for general construction average higher than the Tilton figure, for most of them include metal stacks and wood shelving. The Southwest branches include bookshelving in equipment like the Tilton figures. Evansville used much of their old furniture, unbalancing the series of figures.

The table also illustrates the tendency toward more elaborate heating and electrical systems in the newer libraries. The six small libraries were built ten or twelve years ago when direct radiation and lighting were general, so the corresponding figures should be raised for new buildings. The heating and ventilating costs have naturally been low in the Southern libraries, but this may change with the wider use of air cool-

TABLE 2
COST PERCENTAGE BREAK-DOWN OF TYPICAL POST WAR LIBRARY BUILDINGS

LIBRARY COMPACT TYPES	GENERAL CONSTRUCTION	PLUMBING	HEATING AND VENTILATION	ELECTRIC WORK AND ELEVATORS	FURNITURE AND EQUIP- MENT	ARCH. AND ENG. FEES AND EXPENSES
1927 Philadelphia, Pa.....	68	4½	9	4½	8	6
1933 Baltimore, Md.....	66½	3	10	9½	8	6
1940 Toledo, Ohio.....	60	2	10	14	8?	6?
1927 Birmingham, Ala.....	78	1½	4	2½	9	5
1939 Fort Worth, Tex.....	70	3	7½	4½	10	5
1932 Evansville, Ind.....	81¾	2¾	3¾	4½	2¼	5½
1931 Lake Forest, Ill.....	71	3	10	4	5	7
1931 Winchester, Mass.....	70	1½	12	5½	5	6
1938 West Hartford, Conn.....	73½	2	6¼	4	8	6½
<i>North and East, Averages</i>						
1924 Four Large Branches.....	76	3	7	3½	4½	6
to Six Small Libraries.....	79½	2½	4½	2½	4½	6½
1932 Nine Small Branches.....	74	2½	8	4	5½	6
<i>Extended Types</i>						
1927 Pasadena, Calif.....	76	1¾	6¾	3½	6	6
1933 Austin, Tex.....	75	3	3½	3	10	5½
1940 Redwood City, Calif.....	74½	3¼	6½	5¼	5	5½
1919 La Jolla Branch, Calif.....	72½	2?	1?	6	13½	5
1927 La Pintoresca Branch, Calif.....	72	2	0	6	15	5
1928 Ocean Beach Branch, Calif.....	71½	4	6	3	9½	6

NOTE.—It must be clearly understood that the figures in the last column of Table 2 above do not represent the percentages of building cost the architect receives as his fee. They are percentages of total cost break-down, a very different matter.

ing and dehumidifying. New apparatus is developing with such rapidity that old percentage tables are undependable. If the electrical work figure in a small library is 3 per cent with direct lighting, it would probably be 4.5 per cent with all indirect lighting. If the heating figure is 4 per cent with direct radiation, it would be materially increased with partial ventilation, and might be raised to 12 or 13 per cent by complete air conditioning. The high electrical costs at Baltimore and Toledo are doubtless due to the number of elevators, booklifts, vent-fans, and light circuits.

The general construction percentage figure is reduced by a more elaborate mechanical installation, but increased by changes to more expensive material, from brick to stone or marble, by elaborate plasterwork or carving. This reduces the percentage figure for the mechanical trades, and so on. The balancing of all these figures is delicate, and therefore this table must be used with caution.

AN EXAMPLE OF COST BREAKDOWN

Further insight into the numerous items involved in a building project may be gained from a study of Table 3, which gives a detailed break-down of cost and suggests the many items involved in a single large library building.

TABLE 3
APPORTIONMENT OF GENERAL
CONTRACT, BALTIMORE

General conditions, etc.	\$ 85,000.00
Wrecking and excavation	60,000.00
Foundations	139,000.00
Brickwork	70,000.00
Reinforced Concrete	42,000.00
Gypsum	9,000.00
Cement finish	23,000.00
Tile partitions	35,000.00
Tile arches	42,000.00
Plastering	65,000.00
Flagstone and Rubble	3,500.00
Limestone, F.O.B.	90,000.00
Granite, F.O.B.	30,000.00
Granite and Limestone Setting	45,000.00
Millwork and Carpentry	75,000.00
Sheet Metal and Roofing	23,000.00
Hollow Metal and Kalamein Doors	20,000.00
Glass and Glazing	10,000.00

Painting	\$ 14,000.00
Ornamental Iron and Bronze	60,000.00
Structural Steel	175,000.00
Plumbing, Heating and Ventilating	290,000.00
Electric Wiring	150,000.00
Elevators (2 public, 4 staff, 1 freight, 7 book-lifts)	75,000.00
Double Hung and Casement Windows	26,000.00
Roof Lights	5,000.00
Interior Marble Work	66,000.00
Rubber, Linoleum and Mastic	23,000.00
Tile and Accessories	15,000.00
Bookstacks	130,000.00
Acoustic Treatment	2,500.00
Allowance (Hardware, Models, Electric Fixtures, \$57,867.64) Decorating	100,000.00
	<u>\$1,998,000.00</u>
Net extras	4,112.55
Building proper	<u>\$2,002,112.55</u>
At 4,500,000 cu. ft. = 44½c. per cu. ft. for building unfurnished	
Architects' fee on \$2,002,112.55	110,116.19
	<u>\$2,112,228.74</u>

Wood Furniture	\$47,244.25
Steel furniture and metal exhibit cases	27,993.00
Additional built in cabinet work and cases	5,072.00
Furniture for two special rooms and draperies	4,842.21
Rugs	2,383.23
Venetian Blinds	4,989.00
Miscellaneous equipment and appliances	8,405.50
	100,929.19
Supplementary items, 1933, not in contracts	30,000.00
Miscellaneous expenses outside of contracts (not including acquisition of site)	8,000.00
Total for furnishings and equipment	<u>\$ 138,929.19</u>
Total Building and equipment	<u>\$2,251,157.93</u>
At 4,500,000 cu. ft. = 50c. per cu. ft. complete	

SPECIAL EXPENDITURES

The miscellaneous expenses referred to just above included a considerable number of built-in features, which were overlooked in the planning, and such additional items as the following:

Extra blueprinting, for staff study, \$375; damage suit closing alley, \$400; plotting and title work, \$30; advertising furniture proposals, \$24; printing and binding furniture specifications, \$488; extra water drain, \$978; extra paving, \$2,154; book supports, \$210; ladders, \$61; janitor and mop trucks, \$422; instrument to measure humidity, \$158; shrubbery, rugs, \$2,260; two marble memorial tablets, \$490; lettering directional signs, \$283; lettering all public book-cases, \$382; special reflectors, for dark corners, \$240; electric fans, \$461; bronze directory board, \$205.

CHAPTER 11: SCHEDULE OF BUILDING ELEMENTS AND AREAS

A BUILDING is a shell enclosing an organism. To design the shell intelligently the organism must be scrutinized, its elements and their sizes determined, the requirements of each studied, and their functional interrelationships thoroughly understood. To facilitate this understanding, the authors in this chapter present the general subjects that must be considered, the rooms or spaces that must be listed in preparing a program, and the proper allotment of floor-space for the major departments. The functions, activities, and placement of these rooms or spaces will be considered in the following chapters.

BASIC CONSIDERATIONS

The amount of the building fund available.
The site. This is discussed at length in Ch. 6.
The population of the community.

- (a) Its present size and character.
- (b) The estimated population in 20 years.

The climate.

The extent and use of other library facilities in the neighborhood.

The number of volumes in the old library, and to be provided for in the new.

The number of readers' seats in the old library, and the number to be provided for in the new.

The number of volumes circulated the preceding year, and the number likely to be circulated in the future.

The size of the present library staff and that required for the new building.

MATTERS TO BE CONSIDERED IN DEVELOPING THE PLANS

The location of the main public entrance or entrances, and of service entrances.

The levels of principal floors as affected by the entrance levels.

Should building be set back from lot line? If so, why?

The best position for the reading rooms:

- (a) Orientation for best lighting?
- (b) Possible interference with lighting by adjacent buildings?
- (c) Quiet.

The planning of the first floor:

- (a) Is it to be the main floor, containing the main circulation desk, or desks, and the public catalog?
- (b) Is it to be at sidewalk level, avoiding entrance steps?

The planning of other floors:

- (a) Can any other floors be entered near grade levels?
- (b) What general departments may be on other floors?
- (c) What will be the approaches to these floors?

The general type of plan-arrangement; all possible types to be considered and compared.

Location of bookstack.

The character of the exterior, interior:

- (a) Should it be fireproof?
- (b) Building material?

The heights of stories and stacks?

The construction and type of stacks?

The lighting, heating, and ventilation?

The control of the entire library, and all entrances, at all times?

The flow of library users through the building. Halls? Stairs? Elevators?

The separation of adults and children, and newspaper readers and book readers. Separate entrances?

The relationship of reading rooms to each other, and the placing, if possible, of all the adult purposeful use of books on one floor.

The nearness of the preparatory departments to

the public catalog and other tools which they use.

The location of open shelves, catalog, and work room near the desk, if a small library.

The placing of staff members during rush hours; during quiet times.

CHECKLIST OF ROOMS AND SERVICES

Note: Each item should be considered as to its necessity, location and space, with the understanding that separate rooms are not required for all of them. The more the activities can be grouped together the better, for the more the building is divided up by permanent walls or partitions, and the more departments and public rooms added to it, the greater the expense for construction, supervision, and personnel, and the more difficult and expensive to change in the future.

To insure due consideration of each item we have put this schedule in question form.

1. *Movement of People and Materials*

Vestibules; halls; stairs; elevators; booklifts and the "circulation" or arterial service.

2. *Public Contact*

Check-desk; coat room; umbrella stand?

Public toilets? Keep to minimum; avoid if possible.

Public lunch rooms, restaurant, cafeteria and kitchen?

Emergency room?

Pay telephones? Conversation room?

Public writing or typing rooms? (Readers frequently wish to bring a typewriter, or use library machine, to copy from library materials.)

Public stenographers?

Return desk and work space. Charging desk and work space.

Registration desk and work space. Combine with two preceding?

Information desk? (For general information, or for helping with the public catalog?)

Reference and subject department service desks and work space.

Public catalog. Location? Size? What departmental and duplicate catalogs?

Union catalog? Depository (Library of Congress) catalog?

Readers' adviser? Work and book space?

Display cases? Accessions display racks?

3. *General Split-up of Reader Groups and Book Collections*

Is it to be by subject departments? Or is it to be a division into reading, reference, document and periodical rooms?

Shall the rooms or departments be over, surrounding, adjoining, or in what other way related to the central stacks? (See 5 below.)

What is the general policy as to open shelves *vs.* closed shelves?

4. *Reading Rooms*

How many? Which shall combine bookstock and reader-groups?

How many readers in each? How many volumes in each?

Are double-faced cases permissible? Closed stacks?

What service desks and staff work rooms in each?

Department heads' work spaces or rooms?

Departmental catalogs and card index cases?

Provision for periodicals, pamphlet and vertical file material in each?

Which of the following types of rooms are to be provided?

Reference room

Fiction room

Room for new and popular books

Periodical room

Subject division rooms

Newspaper room

Smoking room

Roof reading room

Outdoor reading room

Browsing or quiet room

Compartments or cubicles

Children's department

Story hour room

High school or Young People's room
 For recreation?
 For reference?
 Library for the Blind
 Picture Collection
 Map room
 Music room. (Sound proof?)
 Foreign language room
 Special study room

Are there to be special divisions, such as Local History, or Education, or Genealogy, or Law, or Medicine? (Special rooms or collections in the last three subjects are not considered within the usual province of a public library unless financed outside a minimum \$1.00 per capita budget.)

Are donated collections, or memorials, separated from the subject divisions or general reading rooms? (Every such separation and special room is an impediment to efficiency and economy, but in some cases may be justified. See Ch. 14.)

5. *Stack Storage*

Present capacity? Future capacity?

Number of volumes per foot? (See Ch. 40 for formulas.)

Spacing of ranges and aisles? (See Ch. 40.)

Shall the stack be in one large unit, or supplemented by stack annexes to various reading rooms? (See Ch. 15 for placement of book-stock.)

Is there to be free public access to stacks?

Supervision of access?

Number of ordinary and oversize volumes, periodicals, newspapers, etc.?

Number of volumes in reading rooms (in addition to those in stacks)?

What stack wall space shall be filled with shelving?

Any fireproof vaults? Or screened spaces?

Are carrels desired? Are study rooms?

¹With the exception of these three items, the book capacity of work rooms should not be figured in the capacity of the building, for while considerable book shelving is essential for the ebb and flow of the work it should be kept fairly empty.

How much space will there be for storage of gifts, materials in process, duplicate periodicals, newspaper files, etc.?

Equipment? Sorting tables? Elevators? Book-lifts? Conveyors? Pneumatic tubes?

6. *Work Rooms*

Order, or accessions, department } Possibly
 Catalog department, with shelf list } combined?
 Route of travel of each type of book through the departments.

Is an official catalog required? (A duplicate of the public catalog?)

Is there a Library of Congress or other depository or union catalog?

Reference, circulation, and subject department work rooms.

Provision for public department heads to have office space secluded from, but adjacent to, the public?

Branches department?¹

Stations department?¹

Schools department?¹

What, if any, stack capacity for circulating book collections? Outside lighting and proximity to book collections outweigh proximity to shipping room.

Stenographers and typists? How many? Pool or separated? Where?

Mimeographing?

Multigraphing?

Separate, or connected with departments? Which ones? Provide shelving for paper stock, stencils, finished jobs, etc.

Photographing? Microphotographing? Film storage and projection (fireproof?)

Printing? Bindery and mending?

Proper location of ceiling outlets to serve every employee's desk from the correct angle, and light even work room corners?

Washbowls in all work spaces?

7. *Staff Rooms*

For both men and women?

Lunch room with kitchenette?

Quiet room or rest room?

Lounge and recreation room? Smoking allowed?

Lockers? Dressing rooms? Toilets? Showers?

8. *Administrative Rooms*

Trustees room? Combined with librarian's office?

Librarian's work room?

Assistant librarian?

Secretaries: which offices require them?

Business office? For purchases? Accounts? Statistics? Vaults?

Editing and publicity?

Conference room? Staff assembly room?

Training classroom?

Lavatories? Toilet rooms? Showers?

9. *Building Service* (See also Chs. 7, 35-42)

Receiving and shipping? Temporary storage?

Branch library service?	{	Receiving, making up, shipping? (Preferably adjoining garage.) (See same heading under 6, above.)
Stations and schools?		

Superintendent or janitor?

Workshop (for carpenter or mechanic)? Machinery rooms?

Supplies? Building and janitor supplies? Storage of building equipment? (Ladders, storm windows, screens, etc.)

Slop sinks and janitor equipment closets? On each floor?

Lavatories? Toilet rooms? Showers?

Garage? Big enough for "trailer," and for increasing branch and station deliveries? Does it adjoin shipping room?

10. *Public Toilet Rooms*

Men's toilets? Women's toilets? Accessibility and control? (Keep to a minimum; omit if possible. Locate to simplify supervision; make rowdy-proof.)

High school boys—and girls—coat rooms and toilets?

Children's coat rooms and toilets (boys and girls)?

11. *Extraneous*

Club or conference rooms?

Auditorium? (for music, lectures, etc.) Under what rules?

Radio or phonograph listening rooms?

Exhibit room? Museum or gallery? Used also as reception room?

Print collection? With art department?

Any medical, historical, or other local society to be given library space? (For meetings, books, or museum?)

12. *Mechanical Equipment*

Boiler room and stack? Or is there a connection with the public service?

Fuel storage? What fuel? Ashes? Storage outside building line?

Stationery and professional supplies? Who supervises each?

Direct heating? Steam or hot water?

Indirect heating? Fans and ducts? In what rooms?

Air conditioning? Filtering? Humidifying? Cooling? Dehumidifying?

Fireplace (e.g., in children's, staff and browsing rooms)?

Hot water? Ice water?

Incinerator?

Transformer vault?

Types of lighting in each room? (Compare with furniture layout.)

Lighting of entrances? Floodlighting?

Electric clocks?

Telephone switchboard? Stations? Bell system plus inside system? Buzzers and other signaling devices?

NOTE: See also the checklists in Chs. 33 and 42.

FLOOR AREAS

With the foregoing list of items checked for possible inclusion in the building, the architect must get from trustees and librarian a statement of capacities and sizes of at least the major rooms. Relative proportions of floor space have not been standardized. One or two writers have suggested what they considered a normal alloca-

tion. John A. Lowe (*Arch. Forum*, Jan.-Feb., 1924) has suggested a main floor schedule for a small library:

Delivery room	225 to 275 sq. ft.
Book room (open stack)	400 to 450 " "
Adult reading room	375 to 425 " "
Reference room	275 to 300 " "
Children's room	475 to 500 " "
Librarian's office and work room	175 to 200 " "

These figures do not allow for wall thickness, stairs to basement, toilet rooms, vestibule, etc., which take up at least 15 to 20 per cent of the total area measured to the outer line of the exterior walls. In Table 1 these figures are reduced to percentages and compared with the authors' measurements of actual small libraries.

Librarian's office and staff rooms	2,000 sq. ft.	9%
Lecture room	1,500 " "	7 "
TOTAL	22,500 sq. ft.	100%
8,000 sq. ft. in basement		
8,000 sq. ft. in first floor		
6,500 sq. ft. in second floor		

A comparison of the Lowe and Tilton figures—when both sets are converted into percentages—indicates that the larger library building has, proportionately, about twice as much bookstack area, half as much charging- and delivery-room area, and two thirds as much reading-room area. This distinction between two- and one-story buildings is understandable. Additional main-floor area costs are high; second-floor space, cheap but inconvenient, may be dealt out generously.

TABLE 1
DIVISION OF FLOOR AREA IN SMALL SINGLE FLOOR PUBLIC LIBRARIES

DIVISION	J. A. LOWE'S FIGURES ¹	CENTRAL LIBRARIES (IN NORTH) ²	BRANCH LIBRARIES (IN NORTH) ²	BRANCH LIBRARIES (IN SOUTHWEST) ²
Delivery Room.....	10.2%	10.5%	10.5%	9.5%
Open Bookstack.....	17.8	12.5	3.5	12.0
Reading Rooms.....	49.2	50.0	57.5	41.5
Work, Staff and Offices.....	7.8	7.0	8.5	12.0
Club or Story Hour.....				10.0
Walls, Stairs, Toilets, etc.....	15.0	20.0	20.0	15.0
TOTAL.....	100.0%	100.0%	100.0%	100.0%

¹ As interpreted by the authors. For small libraries.

² Authors' measurements. Note: If the club or story hour rooms, so popular in the Southwest, were placed elsewhere, the areas of the first four elements would be considerably increased.

Establishing a satisfactory set of standards for apportioning floor area in a larger library is a much more difficult matter. Edward L. Tilton (*Arch. Forum*, Dec., 1927) offered the following figures for dividing the *usable* area of an imaginary two-story and basement building, after 20 per cent of the total area has been deducted for walls, halls, stairs, and the like:

Charging and delivery rooms..	1,000 sq. ft.	5%
Various reading rooms	9,000 " "	40 "
Stack area: 2 tiers in basement	6,250 " "	27 "
Catalog room, work room and toilets	2,750 " "	12 "

But the usual problem is to apportion the valuable main floor to the chief library purposes. Halls, piers, panelling, delightful extra-library experiments—all these must be minimized for the reasons given in Ch. 33.

The following table results from the checking of areas in many single-story central and branch post-war buildings. In libraries where the children's room is placed on another floor, the allotment of space is quite different and varies widely. The space taken as 100 per cent is the area *inside* the exterior walls because they vary so greatly in thickness; architects will make the

necessary additional allowance for this outside wall thickness.

In cases where a club or meeting room infringes on the main floor, it was not counted in as library area. The amount of valuable main floor space thus taken in 19 of the 53 branches studied averaged $4\frac{1}{2}$ per cent of the area counted. The authors do not believe that group meetings should compete with true library activities for main floor space. Adult reference space is included in adult reading-room figures. Larger bookstocks should be available both at centrals and branches, as pointed out elsewhere. Shelving and stack space on main floors should be supplemented by mezzanine and basement bookcases, preferably the former.

TABLE 2

RATIO OF MAJOR AREAS IN SINGLE-STORY CENTRALS AND BRANCHES

Note: Measured inside the outside walls and therefore not correlated with Table 1.

	CENTRALS		BRANCHES	
All reading rooms (including wall shelving).....	54%		60%	
If no intermediate room				
Adult.....		27%		30%
Children.....		27%		30%
If an intermediate room				
Adult.....		22%		24%
Intermediate.....		10%		12%
Children.....		22%		24%
Circulation room (with service desk and some books on display and space for reader movement).....	10%		12%	
Offices and work rooms.....	12%		10%	
Open stack, i.e., double-face cases grouped on main floor, generally behind the desk....	14%		8%	
Stairs, vestibule, columns, etc..	10%		10%	
	100%		100%	

CHECKLIST OF TESTS

It is wise frequently to subject the preliminary plans of a library to several fundamental tests in order that basic faults may early be detected and avoided. Careful study should be given each successive set of plans, having in mind the many

ways in which the building will be used by both library staff and public. To do this, one must visualize the movement of persons and books through the library, as well as the chief points of contact between book users and library attendants. To be sure, such study of building use will have preceded the preparing of these plans, but it is well to check them before proceeding further to see whether they satisfy all the essential requirements:

Check plans by each of the "Matters to be considered," listed early in this chapter.

Any space not used to best advantage?

Do plans suggest any simplification of arrangement?

Does the plan-arrangement of each floor facilitate the smooth flow of traffic through it?

Only a short distance from vestibule door to circulation desk (or desks)?

Sufficient light at desk? (Should not face a strong light.)

Does desk control entrance?

Are readers fairly well in sight of the several desks (centers of control)?

At quiet periods in the day it is desirable to reduce the number of staff members in touch with the public. Can the library be controlled from the minimum number of centers?

Catalog quickly reached by public? By attendants at desk? By reference readers? By catalogers?

Open stack quickly reached by the same groups?

Mezzanines introduced wherever possible and used to best effect?

Trace route of a book from any department, as taken by a reader from the shelves, to be charged, returned, discharged ("slipped").

Trace routes of different types of readers, and of staff, by lines and arrows drawn on sketch plans; for example:

Adult borrower returning book and wishing a new one on gardening.

High school student looking up customs of Middle Ages.

Engineer wishing last issue of *Engineering News* and book on bridge building.

Loafer seeking daily newspaper.

City official to consult *N. Y. Times*.

Trace route of a new book from receiving room through order and cataloging departments to shelf. Relation of shipping room to route of newly added books is unimportant.

UNITS OF MEASUREMENT

Unit measures and their variations are discussed in later chapters, but there are a few that are sufficiently accurate for early preliminary plans and hence may be mentioned here:

25 sq. ft. per reader in reading rooms.

100 sq. ft. per employee in catalog rooms.

75 sq. ft. per employee in all other work rooms.

7 volumes per foot of shelf in open reading rooms.

6 volumes per foot of shelf in stacks (an efficient working capacity).

15 volumes per square foot in each tier of stacks (an efficient working capacity, allowing for aisles, stairs, etc.).

2 volumes per cubic foot of stack.

7'6" from floor to floor in stacks.

4'0" to 4'6" from center to center of stack ranges closed to public.

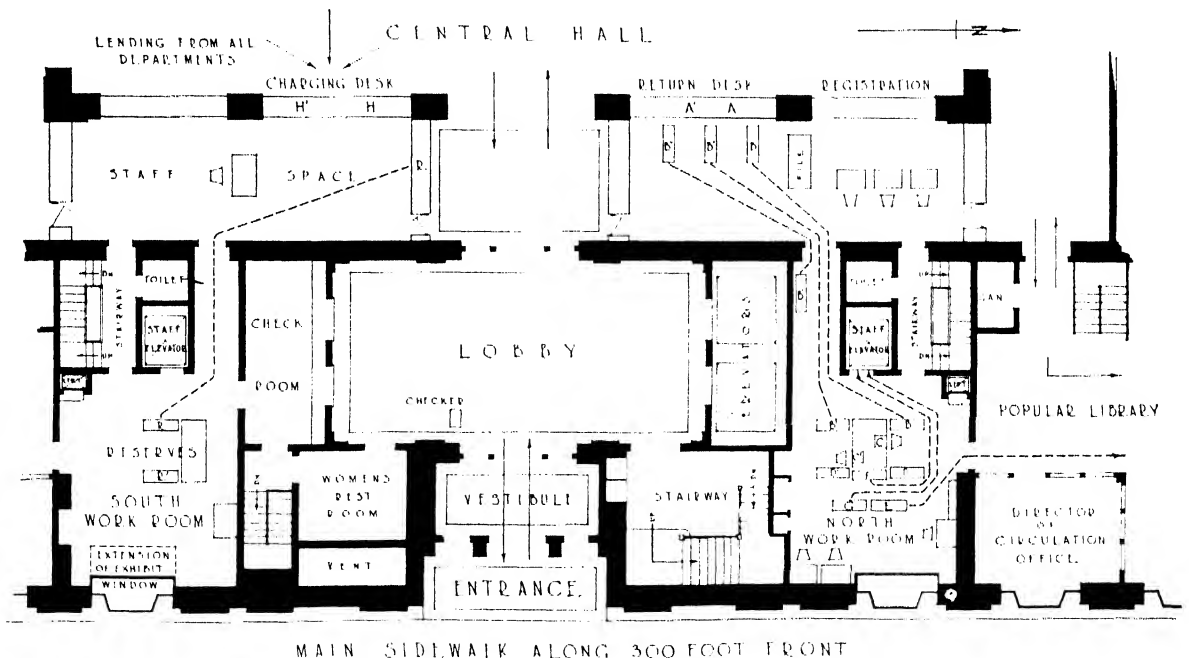
5'6" from center to center of double-faced bookcases open to public.

6' to 6'6" center to center of double-faced cases for fiction in a "popular library" room.

3'0" unit shelf length (center to center of supporting posts or divisions).

7'0" height of wall shelving in adult reading rooms (7 shelves).

5'0" height of wall shelving in children's reading rooms (5 shelves).



Example of diagram to show routing of book: readers have books from several departments charged at one point, H, and returned at another, A; then books move on trucks, B, to workroom, where slipping or discharging is handled at C; then back, D, E, to the shelves of main floor departments, or down elevator, G, to sorting room where they are arranged for return to all departments.

CHAPTER 12: LEVELS, ENTRANCES, HALLS, STAIRS, ELEVATORS

TO VISUALIZE the general aspect of the new library it is necessary to decide its ground area,¹ general heights, number of floors, height of the main floor above the sidewalk, location of the various entrances, and the possible installation of elevators. All these factors have to be weighed together; they cannot be settled independently, and all are influenced by the site.

As the early sketch plans develop, one will trace on them roughly the route of adults and of children to reading rooms, to lending and return desks, to exhibits and to lectures, the probable use of stairs and elevators, coat rooms,

etc. Purposeful and idle-time visitors need to be distinguished, and the convenience of the former given chief attention. This checking of use will help decide whether the entrances and access to the main interior elements are convenient for all.

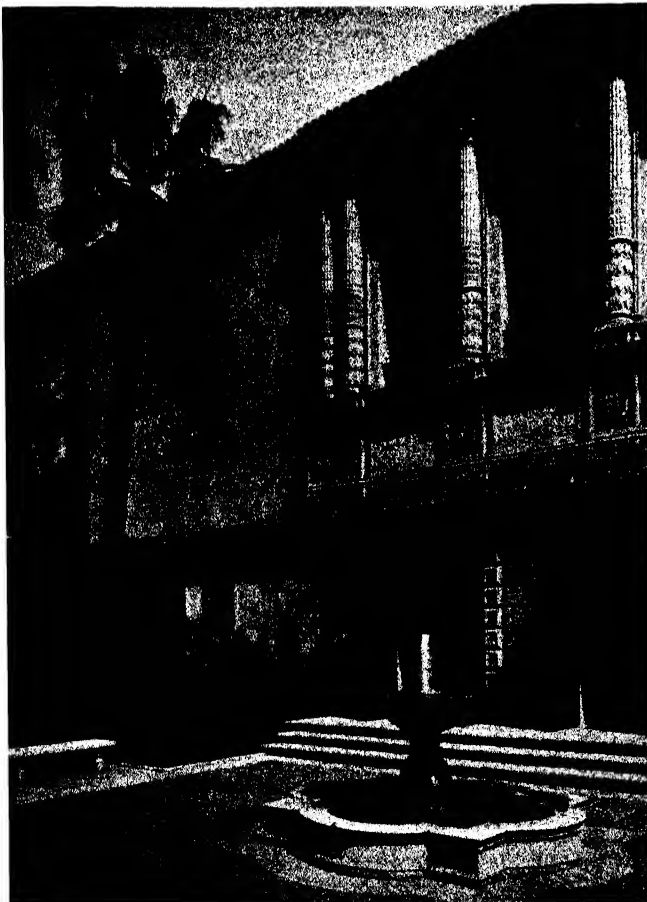
ENTRANCES AND EXITS

For practical reasons a single entrance for the public in the smaller and medium sized library is highly desirable. Special thought and time are justified to secure it. Each entrance to the building reduces usable space by the area consumed in passages, stairs, and other features consequent to an entrance. It requires higher maintenance cost for janitor, heat and light. It also increases the difficulty of preventing disorder and thefts, requiring the attention of a staff member for proper supervision. Local building codes and fire regulations sometimes seem to require more exits than needed; *e.g.*, two or more exits "remote from each other" and placed so that "no point in any floor area . . . shall be more than 100 feet distant" from an exit.² Consequently these exits are apt to be far from a staff desk. Various devices have been tried to discourage their use except in an emergency. At Mt. Vernon, N. Y., a loud electric gong rings when the emergency exit door is opened. At the University of Chicago the knobs of the stack-exit doors are inclosed in glass that must be broken before the knob can be reached. These are not good solutions, but satisfy the law. True safety should dictate any emergency exits needed, and if officials in charge, with the concurrence of the architect, consider that the exit regulations can be safely modified, it may be possible to do it by a special local ordinance.

¹See Ch. 5, 11 and 33.

²New York City Building Code.

Main entrance from patio, Pasadena, Cal. Myron Hunt and H. C. Chambers, architects. 1927. Mott photo.



ENTRANCE OF CHILDREN AND ADULTS

The question of combining adult and juvenile access at one point is discussed in Ch. 16, Children's Rooms.

There are reasons for and against, but in general a separate entrance is desirable where juvenile circulation runs above 50,000 or 60,000 per year.

Staff personnel and morale, community population type and behavior, whether the children leave a litter of bicycles and roller skates about the entrance, all these influence the solution; it cannot be reduced to a formula.

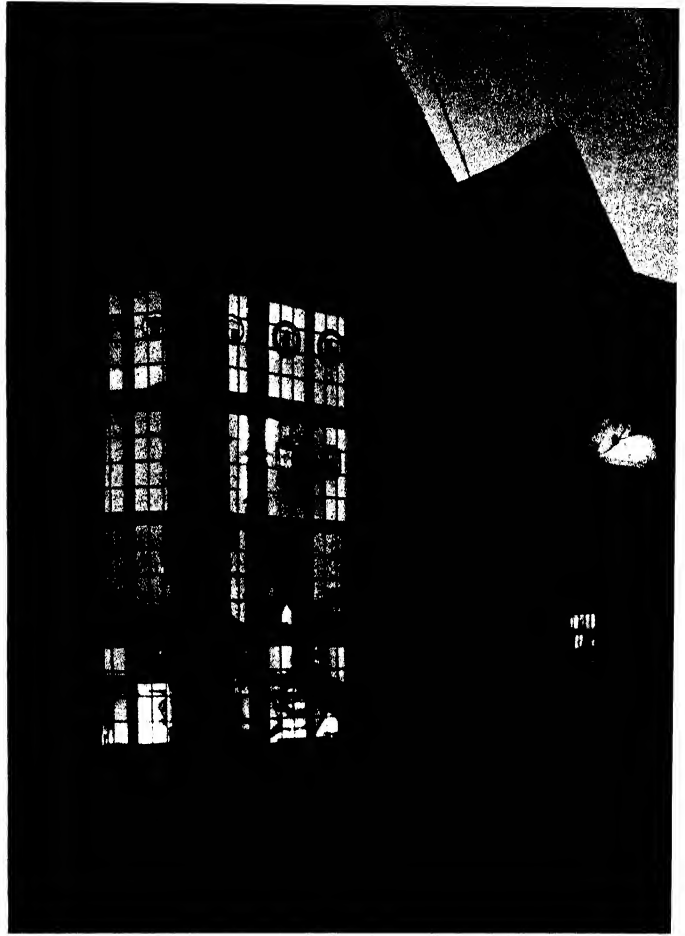
LEVELS AS INFLUENCING ENTRANCES

Before the placing and planning of an entrance and lobby, the site and lay of the land and their effect on the whole question of approach are studied. One should take advantage of a decided slope by placing entrances at the highest and at the lowest levels available, for direct access to two floors. Thus children's rooms, lecture rooms and other public rooms may be placed in the basement, with good ceiling height, full-length windows and a separate entrance, while still keeping the main entrance little if any above sidewalk level. Wilmington, Baltimore, Winchester, Long Beach, West Hartford and the Monroe Branch at Rochester are examples.

Such a terrain is exceptional. With a fairly level site and insufficient area on the main floor for all public rooms, it must be decided whether the rooms most easily detached, children's and lecture rooms usually, are to be put in basement or on second floor. The selection of the basement raises the important question of main floor level and entrance steps.

SIDEWALK LEVEL ENTRANCE

Shall the main floor be at sidewalk level? In the smaller buildings for the past forty years the use of the basement for children's rooms or public meeting rooms has meant that the main floor is high above ground level and a flight of entrance steps must be climbed. This practice is largely outmoded. If these secondary activities



West Toledo Branch, Toledo, with entrance close to ground and great window permitting patrons and passers-by to see the busy interesting interior. Gerow and Conklin, architects. 1930.

are to be housed in the library they may be placed on the second floor, reached by their own stairway, or better means must be found to light and properly ventilate basement rooms below the sidewalk level. So far the only solutions in a flat terrain are the creation of a sunken garden (Queensboro Central and Glendale Branch, New York City), or of large sunken areas at the basement windows (West Toledo Branch).

GROUND FLOOR AND MAIN FLOOR

Until recently large library buildings met this difficulty by raising their main floor a complete story above ground with either a great flight of steps and terracing up to the entrance (New York; Manchester, N. H.; Springfield, Mass., etc.) or a grand stairway within (Detroit, New-



Children's garden entrance, Baltimore, a device to use the sloping ground and sidewalk at one end of the building. A few more steps down into this flag-stoned court brings the children to their own separate entrance, flanked by a small lawn, a fountain and a large bow window, lighting the whole end of the children's room. Clyde N. Friz and Nelson Friz, architects; E. L. Tilton and A. M. Githens, associate and consulting architects, 1933.

ark, San Francisco, and Philadelphia), but this is so completely discredited now, so manifestly absurd with its unnecessary stair climbing, that discussion seems superfluous. In favor so long, in the belief that thus a greater useful area on the main floor could be obtained, it was doubtless prompted also by the architect's desire to give the impression of a strong base for his building. Thus the lower rooms were lighted with a minor range of windows, as at Boston, Detroit, St. Louis, and San Francisco. Reluctance in such cases to give adequate window lighting for fear of destroying the apparent solidity of the base was a detriment to the functional value of the building. The modern trend, even in the most monumental buildings, is to bring the main floor nearer sidewalk level.

BEAUTY AND USEFULNESS NOT INCONSISTENT

Flights of steps and a high base are not necessary to make a building beautiful. The Greek temples had few steps. It is a tradition passed on to us from the French palaces, as at Versailles and Fontainebleau, where the active work of the servants required the ground floor, while the noblesse kept to the main floor above them. As to a modern library, the greatest activity takes place on the main floor and therefore the main floor should be the most easily accessible. "Flights of steps," said Soule in 1912, "are a hindrance—effort and cost wasted. From a library point of view they are all wrong."³ And an irate essayist

³C. C. Soule, *How to Plan a Library Building for Library Work*. Boston, 1912, p. 172.

rails at "the debonair habit of never designing an entrance that is easy to enter."⁴

In esthetic expression, a high base suggests exclusiveness, aloofness. The authors of this book hold that the library is and should be thought of as welcoming everyone, in touch with everyone, easily looked into and entered. "The library is not a monument, it does not need to be surrounded by a park, and many Italian palaces prove that the building can still be beautiful when built close to the street."⁵

Dr. Munthe, Librarian of the University of Oslo, Norway, summarizing his conclusions after a tour of American libraries, wrote: "Let us stop looking so terribly solemn, and try to look pleasant and inviting," a viewpoint heartily supported by the English architect-librarian, Mr. E. J. Carter.⁶

ENTRANCE VESTIBULE AND LOBBY

Except in climatically favored sections of the country, a vestibule in connection with the exterior entrance is almost imperative, serving as a buffer between the outdoor and indoor temperatures in winter. It should be generously heated and have all doors equipped with door closers. Drafts may be further mitigated if the two sets of doors are not directly in line with one another. Where a service desk is reversed behind an entrance vestibule with the second set of doors opening on either side there is no winter draft on the workers; but in summer a screen panel can replace the glass panel back of the service desk and permit a welcome direct draft through the outer doorway.

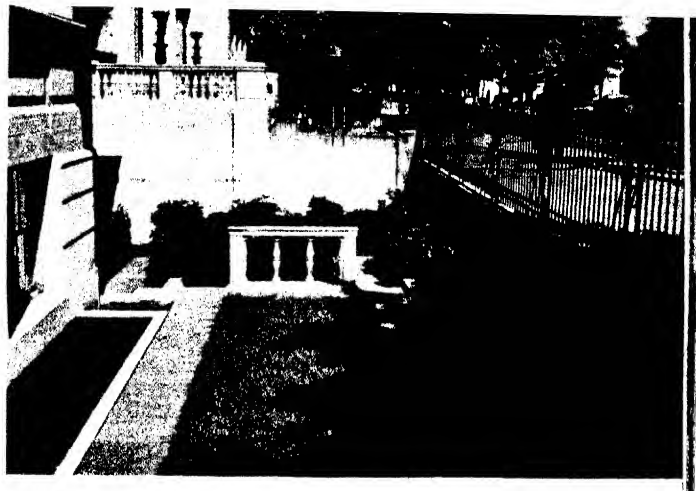
All doors will open outward, for safety and when not needed for protection against weather may be fastened open to facilitate ingress. The entrance vestibule may be equipped with a space sunk to receive a rubber and steel footmat.

Among the very few cases of revolving doors in public libraries are Georgetown and North-

⁴Clarence Day, "Legs vs. architects," in *After All*. N. Y., 1936, p. 95-99.

⁵J. T. Jennings, Unpublished Lecture Notes.

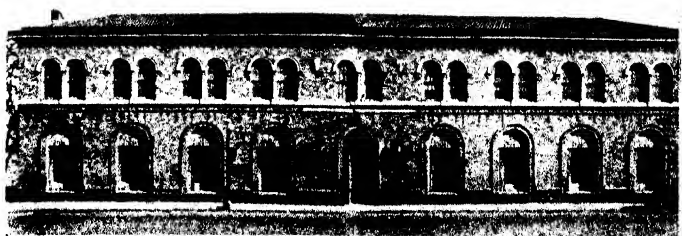
⁶Arundell Esdaile, ed., *Year's Work in Librarianship*. London, 1932, p. 85.

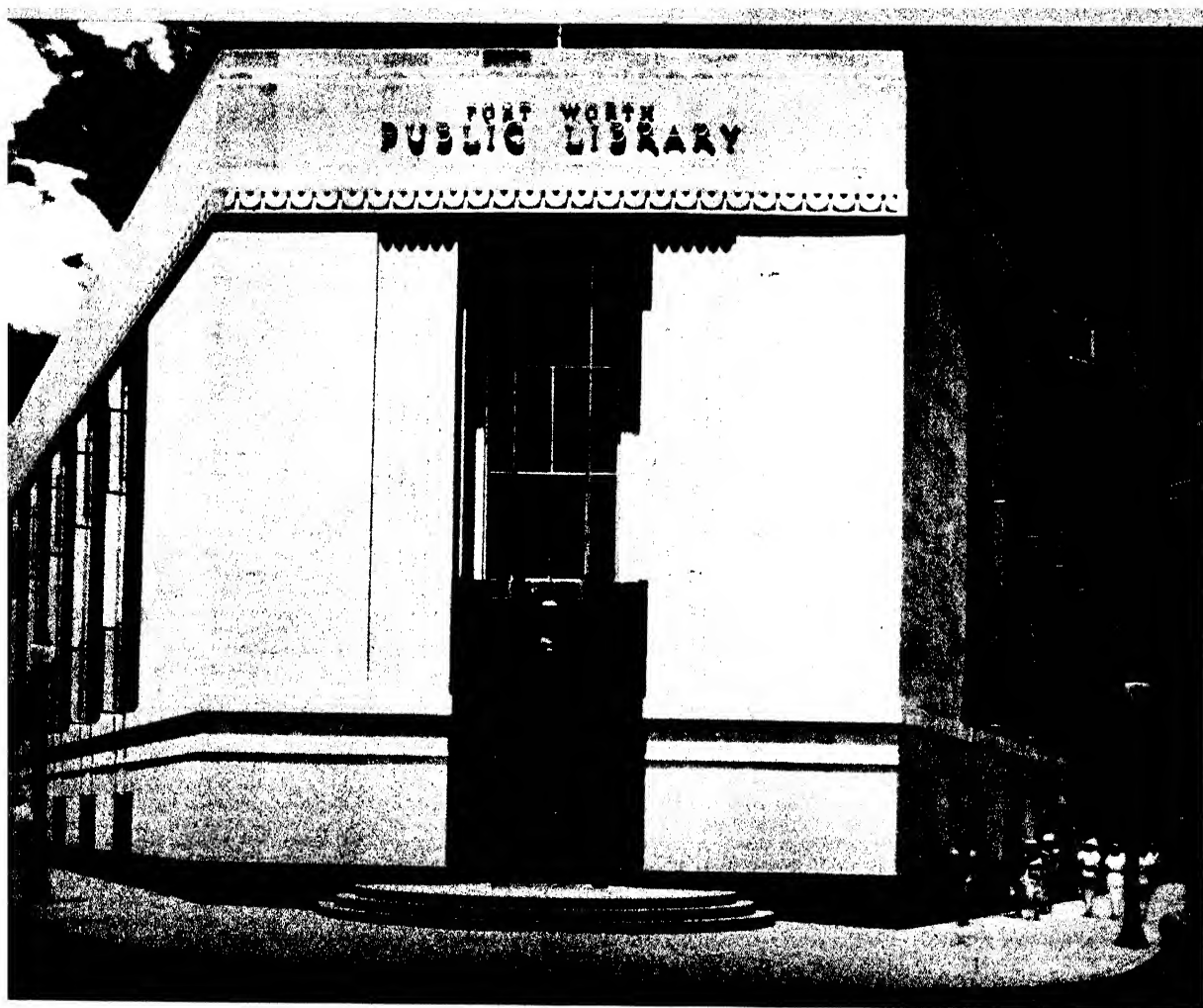


To avoid the usual impression of a cellar, Queens Borough gives its basement full light and an attractive outlook on these sunken gardens around the building. Cf. its Glendale Branch (see Ch. 27), and on a grander scale the sunken gardens around the Deering Library at Northwestern University.

east branches at Washington, the central libraries at Omaha and Birmingham, the remodelled Oakland, Cal., building, and the Forty-second Street door and one of the Fifth Avenue doors of the New York Public Library. Another case is in the new Brooklyn building whose entrance is exposed to the north winds; here a revolving door for winter use is flanked by swinging doors for summer. Not all visitors like even the most modern revolving doors and their mechanism. "They are a nuisance: noisy, boys love to spin them. Not in our new building." At the Legler Branch, Chicago, the revolving door was abandoned, but "downtown where there is more corridor space they are effective." At New Rochelle, N. Y., it eliminates drafts but "they would prefer regular doors with an electric eye." Their

West Side Branch, Grand Rapids. This is the first library of considerable size to be built close to a sidewalk and opening at its level. As here, "so in a downtown building, low windows permitting John Smith walking or riding by, to see Sam Jones digging in, in the reference room, is worth infinitely more than printed publicity," says Ethel McCullough. Robinson and Campau, architects. 1926.





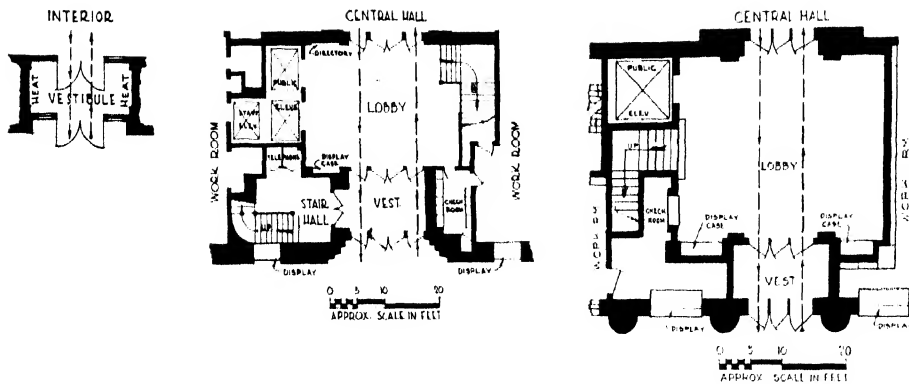
Fort Worth, Texas. The problem of a triangular plot. Follows the old tradition of a basement story. Therefore, though the entrance is at grade, an inside stairway is required to reach the main floor, as at Berkeley, Cal. Joseph R. Pelich, architect. 1939.

advantage is in preventing drafts and requiring the minimum floor area. The automatically opened door operated by the electric eye seems not to be in use in any library as yet, but the electric eye was tried as a counting device at the New York Public Library and given up as people sometimes came so thickly that not all registered, while it was subject to boyish pranks. It was superseded by a seemingly effective turnstile.

Posterity may not appreciate the usual elaborate entrance tablets recording the names of city officials, trustees, and committees; restraint will be almost as welcome as total omission of such a record of the self-satisfaction of the participants.

From the vestibule the visitor will pass into the lending room of the smaller library, or perhaps into a single lobby or central service hall in the larger building. The lobby of larger buildings may have coat room, elevator entrance, stair opening, and other features. If funds permit, a guard or checker should be stationed there for proper supervision of the crowds and inspection of books taken out. If his desk can be incorporated in the plan and equipment of the lobby so as to avoid the appearance of an afterthought, while having him sufficiently in evidence to prevent anyone passing without his scrutiny, it will be worth considerable study.

On account of the noise, the larger library separates this lobby from the interior service



In small buildings two sets of doors with a 5' or possibly 4' 6" vestibule between them, are essential to keep cold and drafts from the interior. In larger buildings other facilities will be added; elevator, washroom (very objectionable near entrance), checkroom. Rochester (3) takes its children from the lobby by a small stair. Toledo (2) deepens its vestibule sufficiently for a stair entrance which diverts them from the lobby and is lighted from the exhibit window.

rooms, such as the lending or delivery room, by still a third set of doors which will further minimize the drafts affecting employees located near or in line with the entrances.

Tile or marble wainscoting to a height of not less than four feet in public passages, especially near elevators, permits easy washing and avoids frequent repainting. Stained waterproof plywood wainscoting is now coming into use for such places. A considerable expense is justified to provide, as completely as possible, sound-absorbent walls, ceilings and even steps and floors, as a conserver of nervous energy.

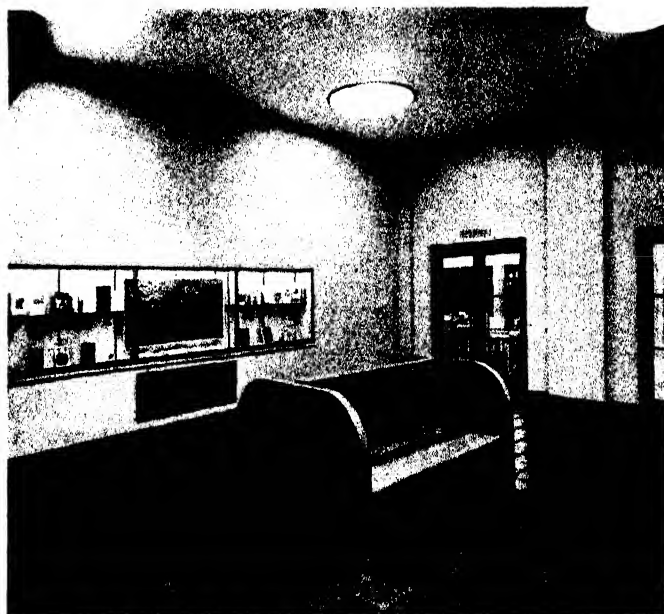
HALLS AND CORRIDORS

"An economical library plan devotes minimum spaces to lobbies, corridors, stairways and such 'circulation,' and the maximum areas to the library proper. It should be proper to limit walls, halls, stairs, etc., to 20 per cent of the area, and yet do justice to their functions."⁷

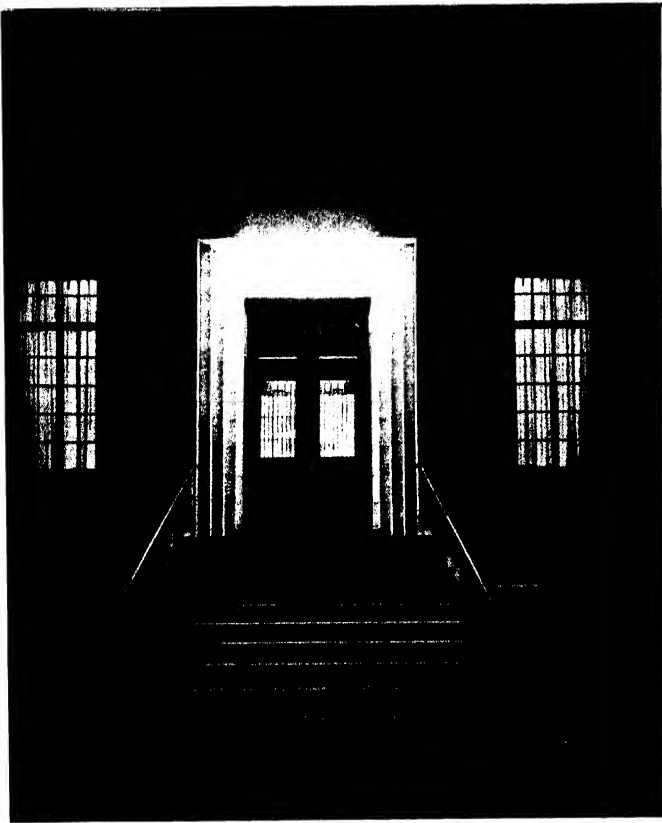
A marked modern trend in library buildings is this drastic reduction of the area wasted on halls and passageways. Their planning deserves special study. How narrow without seeming too utilitarian? How high to secure proportion and light? How much electric light and what type

of fixtures? What sound-absorbing materials for floors, walls, and ceilings? What features to break their monotony: curved ceilings, illuminated exhibit cases recessed in walls, floor cases for other exhibits? Exhibits will slow down

Entrance hall, Scarborough, England. England's remarkable current library progress is well reflected in this simple, carefully planned, hallway, where not a penny has been wasted. Large area of recessed ceiling lights reduces their surface brightness and glare. Note height of recessed, lighted exhibition case. G. W. Alderson, A.R.I.B.A., architect.



⁷E. L. Tilton, "Library planning," *Arch. Forum*, 47:498, Dec. 1927.



Night view of Faneuil Branch, Boston, with soffit entrance lighting, accenting the architectural treatment. Generous and carefully designed entrance lighting implies a gracious welcome, and there is a definite response to it. Kilham, Hopkins and Greeley, architects. 1932.

readers, and should be used only when the corridor is wide, or where those who linger will not inconvenience passing crowds. Long public corridors in busy buildings are a source of troublesome noise and disorder and their supervision must be insured, especially if they lead to washrooms, children's rooms and meeting rooms.

West Toledo Branch. Close to the ground in the English manner, two steps only from path to door—this, and the low-silled windows invite entrance—a basement auditorium, lighted by wide area windows. Gerow and Conklin, architects. 1930.



STAIRCASES AND ELEVATORS

Grand staircases have wasted valuable library space. It is an anachronism to expect busy crowds to use a stairway, and two grand stairs are inexcusable. The trend is to subordinate stairs to the elevator.

With fewer than 600–800 passengers a day, the cost of the operator may be an unfair drain on the budget, for it is hard to combine any other work with proper attention to an elevator. Self-operating push-button elevators are not satisfactory for an indiscriminate clientele.

Data received from nearly every city of over 100,000 population indicate that only two or three largest libraries operate more than one public elevator, though Cleveland and Cincinnati carry 2,500 to 3,000 passengers per day to four floors. Louisville and Denver, large cities with fairly recent buildings, operate no elevators; and among the cities asked, only one below 200,000 population has an elevator. Cities of over 200,000, and cities which have more than 300 or 400 readers daily on upper floors not counting newspaper readers and loafers, should equip new buildings with one modern elevator for present and future needs.

At least one elevator for staff use, automatic and self-levelling, should be provided in every library building which has more than two floors or two levels of bookstacks. It should be carefully located at the point nearest the greatest number of person-trips that grow out of the day's work. See Ch. 37 for elevator details.

RAMPS AND SERVICE STAIRWAYS

Placing public rooms on slightly different levels to secure architectural "variety" is bad practice. Many accidents have occurred; people, books, and book trucks must move from room to room and level to level, day after day, hour after hour.

On the other hand small stairs, though only 24 inches wide (and designed with a floor opening no wider), connecting work rooms, stacks, and service desks are essential to the staff in getting about their work.



Brooklyn Public Library, Entrance doorway. Pillars of limestone, 50 feet high; incised sculptured figures, covered with gold leaf. Bronze screen. Alfred Morton Githens and Francis Keally, architects. 1940.

CHAPTER 13: CIRCULATION DEPARTMENT AND ITS VARIED ACTIVITIES

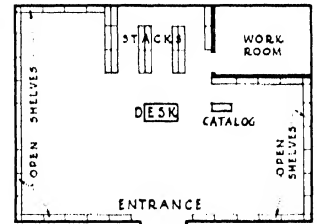
FIRST public contacts with the library are usually made in the circulation department, the area devoted to the lending and return of books. It is sometimes called the lending department. Its focus is the circulation desk, service desk, loan desk, charging desk, or merely "the desk." Long usage has made the terms interchangeable, for their application differs with each building and its arrangement. "The loan desk may be regarded as the heart of a public circulating library." The limits of the circulation department are rather indefinite, varying inversely with the size of the library. In a small library it may be considered to include all the books, and all reference and other work connected thereto. With increasing size and complexity of the library organization, its extra activities are absorbed by special departments. The children's department is usually the first to be segregated; the reference; then the young people's department; finally, with the complete departmentalization of the large libraries, its work includes little more than its primary duties of:

1. Lending books, receiving books that are returned, and the registration of borrowers.
2. Finding books desired by readers or borrowers.

3. The paper work or keeping of records connected with these services.

In most of the recent American libraries this is the first department entered. Its public space, the *circulation room* or *delivery room*, on the main floor, is in the nature of a central concourse, busy with movement to and from the various reading rooms and departments, with persons borrowing or returning books, consult-

Five major elements of plan for circulation department: (1) entrance; (2) service desk with relation to entrance; (3) workroom, possibly combined with desk; (what work shall go on at desk and in workroom?) (4) Catalog with relation to desk, workrooms, readers. (5) open shelves, the proportion and types of books thereon or in open stacks.

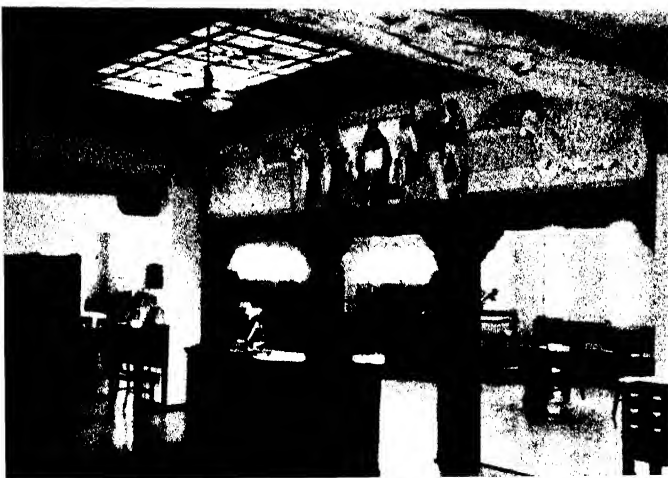


ing the catalog or looking over new books on display. In all except the smallest and largest libraries, there is a convenient range of open bookshelves for fiction and the more popular books, close to the desk, under its supervision, and therefore considered a part of this department. Even in the largest central libraries where the space given to reference work and reading rooms predominates, the circulation department remains of primary importance because the greatest crowds use it and get their major impressions of the library from it. Many readers never use any other department.

ACTIVITIES

In all public libraries the activities listed above need consideration in approximate order of importance. The division between work with the public and that at the staff work desks is marked below by the crossline before or after item 4, depending on whether returned books are

Las Cruces, N. Mex. Circulation room, narrower and lower than reading rooms around it; opposed to the older theory that the circulation room should dominate. Skylight over desk. An interesting development of Spanish and adobe architecture, consistent in everything but desk and catalog cases. Percy McGhee, architect. 1939.





Los Angeles County Library, South Gate Branch. An efficient U-Desk with reference "tools" installed behind it, and catalog close by. Space used to advantage, central circulation space narrower than reading spaces where greater area is required. Bleaching the upper woodwork avoids the usual heaviness of a timber roof yet preserves its interest. Clerestory windows. Efficient direct electric lighting, the light source screened from the side. R. C. Farrell, architect. 1938.

"slipped" at the service desk or in some adjoining space:

(1) Registration—Issuing borrowers' cards after securing sufficient information about the pa-

¹At Evanston, Ill., the registration interview takes place in an attractively furnished quiet room, where the new borrower is made to feel the interest in his individual needs. There is much to be said for thus dignifying this first contact, and making it a personal service rather than a perfunctory routine, though the time involved in the more leisurely interview would be economically impossible with the ordinary library budget; some librarians would feel that subsequent library service might not live up to first impressions.

trons to insure the safe return of material lent. Usually two files are kept: (a) an alphabetical card file of patrons; (b) a numerical file of registration numbers typed on cards or loose leaves.¹ (2) Charging—Recording the date taken, or due, and the borrower, of material lent; also sorting and filing these records (*book cards*), though sometimes this filing is done elsewhere. The renewal of books is a subsidiary process affecting perhaps 4 per cent of the total adult books lent (1 to 2 per cent of juvenile).

(3) Discharging and slipping—(a) Acknowl-



Jones Memorial Library at Aliquippa, Pa. The adult and children's reading rooms open direct from the small circulation lobby which contains no furniture except a large service desk here shown through the metal grille. Steel bookcases are sunk in the travertine walls. A gift library; cost approximately \$13 per capita. Brandon Smith, architect. 1929.

edging the receipt of material returned by borrowers, and (b) finding the book card in the files and returning it to the book pocket.

(4) Slipping—In some large libraries the bulk of books to be slipped (3b) is so great that after discharging, the books to be slipped are trucked or chuted to a separate room sometimes on another level, such as a balcony above or below, where space is not so valuable as at the desk.

(5) Sorting for shelving—Arranging by class and returning books to the departments from which they were borrowed.

(6) Reserving books—Locating in circulation trays the card for a book that has been reserved by a patron, and notifying him by postal when

the book has been returned and is ready for him.

(7) Overdue books—Securing, by mail or messenger, books which are not returned when due.

(8) Lost and damaged books—Determining the amount due for a lost or damaged book and collecting it from patrons.

(9) Snags—Adjusting errors and discrepancies inherent in the records of so many transactions.

(10) Statistics—Recording the number and classes of books borrowed, and other details of the daily report.

PROXIMITIES

The location and arrangement of the circulation department needs to be studied in relation to the following elements in the building plan, arranged roughly in order of the importance of their proximity to the service desk:

1. In the small library

(a) Staff Workroom—A room out of sight of the public, in which may be carried on various activities such as mending old books, pasting, marking and other processes that precede shelving, possibly the cataloging in the very small library. Activities (g) may be carried on here.

(b) Open-Shelf Collection—The most frequently used books, freely accessible to the public.

(c) The Public Catalog—The card index key to the library's bookstock.

(d) Stack Room—Containing books which are serviced by the department staff, but are or are not accessible to the public. Some frequently-called-for books may be shelved here because of inadequate open shelving in the public rooms.

(e) Adult Reference Department—A room, or a part of the main room, designed for reference use of books and periodicals.

(f) Children's Department—A room, or a part of the main room, designed to give both reference and circulating service to children.

(g) Preparation Departments—For ordering, recording, cataloging, classifying and preparing books for the shelves. Can be combined with (a), or be carried on in the librarian's room.

2. In the large library

(a) Staff Workroom—Slipping, overdue, re-

serves and the activities listed under (1a). Those under (1g) will probably be carried on in another room at some distance.

(b) Information Desk—Answering requests on the part of the public for information, direction or aid.

(c) Public Catalog—(As above).

(d) Open Shelf Room—The adult book and browsing room where books are freely accessible.

(e) Adult Reference Department—A room designed for the reference use of books and informational periodicals.

(f) Subject Departments (if any)—The book collection of the library grouped according to subject and serviced by specialists in each particular field.

(g) Stack Room—The closed room defined in (1d).

(h) Readers' Advisory Service—Space and equipment for interviews with readers doing purposeful reading.

(i) Periodical Room—A room devoted to the reading of current magazines and often of newspapers. There is a recent tendency to distribute subject magazines in the subject departments; sometimes eliminating this as a separate room.

(j) Children's Department—(As above).

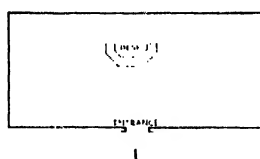
(k) Preparation Departments—(As above).

CIRCULATION DESK: SMALL LIBRARIES

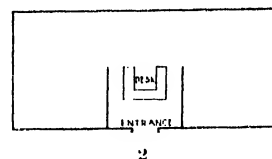
In small libraries, at one time or another during the day, the general supervision and all circulation, reference and children's work may have to be handled from this desk by a single assistant. The location of the desk is influenced by two factors: supervision of the public in both adult and juvenile reading rooms, and control of the exit. The first requires placing the desk as near the center of the ground floor space as possible, with a view into the reading rooms unobstructed by high bookcases, or pillars, leaving no "blind spots." The problem of supervising the exit may be met by the use of railings or low bookcases with or without glass screens above, requiring patrons to pass close to the loan desk when entering or leaving the building.

DESK PLACEMENT

The floor plans in Chs. 23 to 32 will show the definite points at which the desk may be located, though some of these examples are not satisfactory in all respects. Six rather distinct arrangements predominate, each of them good with its proper type of plan:



1



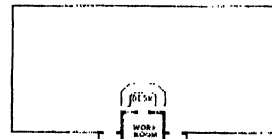
2

1. In the older libraries, and in some of the newer, the desk was placed at the rear of the room, facing the entrance. This had the advantage of placing it near the workroom, but gave inadequate control of the entrance.

2. To give better exit control, the desk is brought forward and readers are forced close to the desk by railings, or low bookcases, or glass screens, leading from the entrance. Persons passing from one end of the room to the other cross behind the desk.



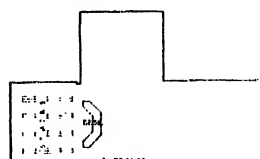
3



4

3. It is a short step from this to the "Reversed Desk" backed up against the entrance vestibule. The assistant oversees the whole room without turning. Reader space is saved and traffic confusion is reduced.

4. To concentrate the staff work the workroom is brought from the rear and placed between

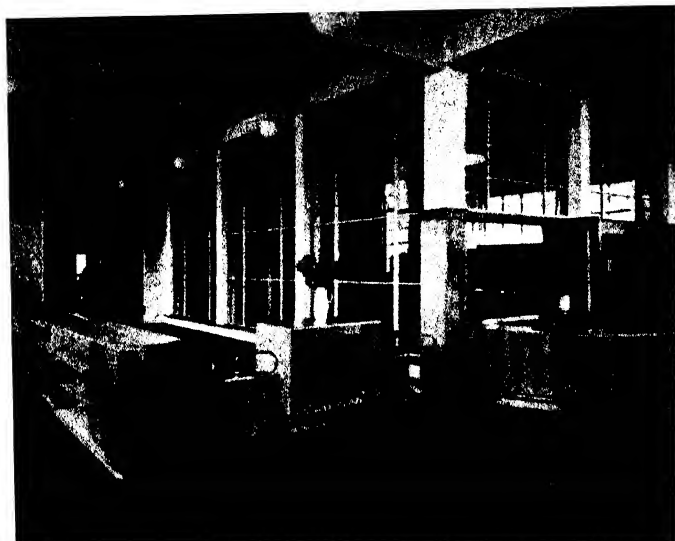


5



6

the reversed desk and the entrance, completing the transit of the desk and workroom from back to front.



Lending Department, Service Desk, Scarborough, England. From reading room, looking toward entrance doorway; glazed partition around reference room; reference desk to the right. The usual objectionable appearance of turnstiles has been mitigated by their housing in the wood pedestals. G. W. Alderson, A.R.I.B.A., architect.

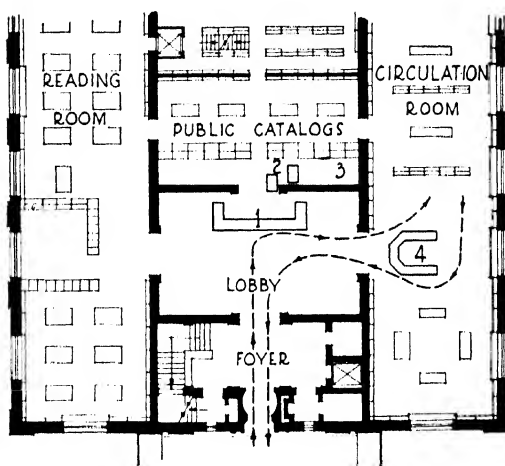
5. Another arrangement, favored of late, is to place the desk at one side, near the entrance, backed by either stacks or a workroom. (This arrangement generally goes with an L-type plan.)
6. Because supervision is needed for a number of surrounding rooms or alcoves, another arrangement places the desk in the center of the plan, making it an "Island Desk," everyone passing freely around it. (Ch. 26.)

A magazine article that received wide attention² expressed the resentment of certain readers and librarians at the traditional central position of the desk that forces everyone entering to face a battery of desk assistants' eyes and be impressed with the mechanics and red tape of

Circulation Room, Richmond, Va. The service desk in foreground is item 4 in the diagram above. There are benches between the bookcases, but no tables in this room. Photo courtesy Globe-Wernicke Company.



library processes. It seems reasonable to ask that the desk be placed to invite access to books, encourage easy "flow of traffic," and avoid any barrier between the visitor and the book area. The desks can be parallel to the thoroughfare, for example. The fifth arrangement in the list above permits a great variety of solutions of an informal sort, welcome in breaking down the customary balanced rectangle with loan desk facing the entrance.



Richmond, Va. An example of decentralizing the circulation work and separating the two streams of readers, returning and borrowing. At (1) all books are returned without congestion; discharging (slipping) is done at two cabinets on wheels at (2) in the alcove just behind. The two files of charging records stand side by side, just close enough to the return desk to allow any advantageous combination of slipping with the receiving of incoming books, etc. Books are sorted for the shelves at (3). If a still greater load of service should demand it, the slipping and sorting stands may be wheeled to a workroom at the rear of the building quite away from the public. The large lending desk (4) at the mouth of the Circulation Room serves one or two streams of borrowers without interfering with the incoming line at (1). Baskervill and Lambert, architects; E. L. Tilton, consulting architect.

SUPERVISION

Book thefts are heavy. Granting the desirability of greater freedom for the public, there is likelihood that a few years will see the return of a

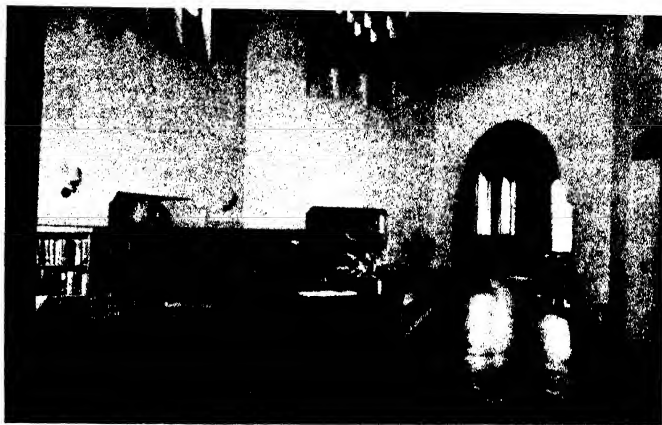
²E. M. Fair, "Horseshoe or millstone," *Lib. Jour.*, 59:429-30, May, 1934.

closer control of exits and bookstock. The architect and librarian have now a problem of reconciling two groups of determined advocates: one wishes openness and informality, allowing the individual reader the pleasure of unrestricted use; the other, convinced that lack of supervision leads to widespread defacement and thefts, proves by statistics that something should be done to prevent it. It will not be by a return to "those extraordinary radial bookcases, to be seen in almost every little town in England—destroying any architectural quality," as the British architect-librarian, E. J. Carter, puts it.³ But close supervision may defeat its own purpose. Someone writes: "Whenever I have been in one of these libraries, I have felt an urge, seldom felt elsewhere, to steal a book, just to show that it can be done." And that, indeed, is the American reaction to such barriers, railings, and turnstiles; it is part of the perennial problem of planning a building and its use so as to combine reader enjoyment and safety of the books.

But turnstiles make for more orderly conditions, probably preventing a certain type of undesirables from entering at all. They give better supervision of patrons at less cost, and reduce the theft of books or magazines. They can be arranged to record attendance. Inventory figures and concern over the loss of public property—books which funds seldom permit replacing promptly—may lead many libraries reluctantly to this drastic and possibly backward step. Whether to accede to sentiment or to protect the rights of other borrowers at the risk of irritating certain patrons must be determined by local conditions.

Railings, perhaps 30 in. high, will guide people past desks and separate the lines of readers headed for different rooms and desks. There is an aversion to these barriers as there is to turnstiles, and their use is likely to be tentative. A better device which gives no offence, is a low bookcase, panelled on the aisle. Other low free-standing furniture units, such as display racks and card cabinets, may be used.

³*Lib. Assoc. Rec.*, p. 210, May, 1936.



Burlingame, Cal., Public Library, showing the loan desk with selected books displayed near by, typical of the circulation department in small- and medium-sized cities, and at many branches. The activity around the circulation desk is screened from the reading rooms. The openings behind the desk are to the workroom and stacks. E. L. Norberg, architect, 1931.

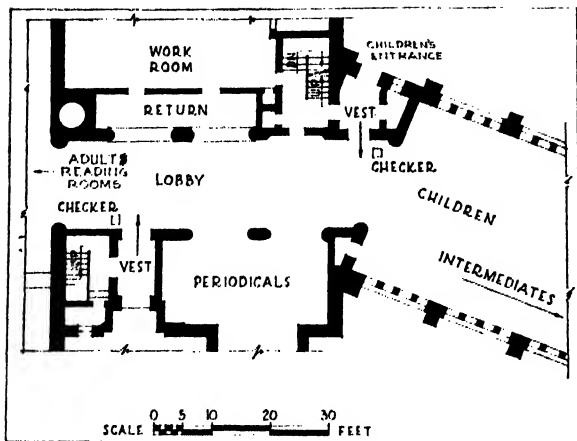
Unfortunately the supervision by busy assistants is usually perfunctory. This weakness is inherent in all library inspection without competent employees for this sole purpose. Both the readers who do and do not attempt to steal discredit the weak, intermittent, generally perfunctory policing by professional or clerical workers. But it is likely that quasi-inspection and provision for it will be continued as a gesture having at least some effect.

Final decision on the placing and surroundings of the desk can only be based on the balancing of all the factors, which include: (a) general supervision *vs.* close scrutiny of individual readers as they pass by, to prevent theft; (b) convenience and freedom of patrons; (c) accessibility to the workroom if at the rear; (d) proximity to bookstack or closed shelves; (e) psychological appeal and appearance. Where close supervision and control are not necessary, devices such as railings and low bookcases to make patrons pass the desk are uncalled for.

In larger buildings it is usual to station at the exit an attendant who supervises all readers leaving the buildings, examines their books to see they are properly charged, and inspects their brief cases and packages.

SEPARATION OF ELEMENTS

There is a gradual separation of the various activities as they grow in volume. In small libraries



Parkman Branch, Detroit, is somewhat of a pioneer in decentralizing. Its return and registration desk face the visitor as he enters, but is recessed behind the wall. See also Ch. 18. Readers charge their own books and present them for supervision to the checker, whose desk is just inside the entrance and therefore the last point before leaving. In quiet morning hours the checking is handled at the return desk. The volume of circulation (350,000) handled at this large branch justifies the placing of reference and advisory assistants in each of the scattered rooms—adult fiction, non-fiction and reference, children's and intermediates.

all activities are carried on at the central service desk. With more business, lending (charging), return, and registration are assigned to their own portion of the service desk, each possibly occupying one of three wings of the typical "U"-desk.

Although an assistant can at top speed charge 150 to 180 books an hour, she could not keep this up over an extended period, and she could do nothing else at the time. The amount of charging, discharging, slipping, and registration combined which one assistant can do depends on the charging system used, whether she stamps dates, writes readers' numbers, or whether a reader's card has to be stamped off or an identification card is used, etc. Those interested in economy will hold that in a library which circulates not more than 250,000 books annually, the charging, discharging, and registration should be done at three wings of a common desk. If books waiting to be slipped can be accommodated without having to be handled

twice, it avoids a confusion of paperwork and too much paraphernalia under the public eye; however, even this may be screened. Above 250,000 circulation the registration may be taken to another desk. The slipping need not be taken away if the accumulation of unslipped books can be kept from looking messy and can be taken direct from discharge shelves to be laid out at the slipping trays. See Chs. 18, Work-rooms, and 42, Furniture, for further discussion. The objection to this removal of the slipping from the return desk in smaller cities is that each separate work area involves moving the books to the second worker, while if discharging and slipping are kept together one or two persons can handle the slipping in the quieter hours.

In very large libraries where public book rooms or departments are spread over two or more floors, it may be best to charge books at several convenient points, as at Cleveland, or in each department as at Los Angeles. In both these libraries all books are returned at one general return desk on the main floor. At Rochester and Baltimore, with practically all adult borrowing on the main floor, both the lending and returning of material are centralized at the general service desks in the great central hall. This permits the staffs in the eight subject departments to give all their time to readers' questions and the book collections, and to concentrate on making the contents of books more useful to the community.

From these examples one may note the impossibility of suggesting a formula or principle of arrangement that can be generally applied.

SPECIAL CHARGING SYSTEMS

Special arrangements must be made in libraries using a "self-charging" system, such as at Detroit. By this method readers record their card numbers on the book cards (kept in pockets within the books until charged), and then present them at a desk near the exit, where an attendant compares the numbers with the borrowers' or identification card, and then inserts a date card or stamps the date. The patron may

record his number at a small table in a reading room or, if more convenient, at the central charging desk. It must be foreseen whether one checking desk is sufficient or whether two lines of patrons must be provided for, and two checking desks, to prevent delays in rush hours.

What charging system is to be used: Newark, modified Newark, Gaylord, Dickman, or Detroit self-charging? That is a matter of policy to be worked out by the librarian and staff before the routing of readers can be planned. So far most libraries still use the Newark system. The desk layout is much the same for the Newark, Gaylord, and Dickman systems. The Detroit self-charging system requires a different layout.

In libraries following the usual plan, with their single large service desks combining the three chief elements of registration, lending and return, the primary question is: Where shall the three parts of the work be placed to meet the paths of the readers as they come and go? While returning should be nearest the entrance, and the registration where congestion is the least, the arrangement of the desk elements is not simple. To see the problem in its entirety one must study out the various solutions on the plans in Chs. 23 to 32 and refer to the six most usual placements for the desk noted above. The desk placement cannot be decided without considering the workroom, as discussed in Ch. 18. To understand the local problem a diagram similar to those following will be useful, indicating with arrows routes of adult borrowers who will visit different rooms or part of the general open-shelf room where the circulating books are shelved, past the service desk, on their way from and back to the main entrance. (See Ch. 42 on Furniture, for desk details.)

DESK TYPES

1. The simplest desk is rectangular without hampering angles. A small straight desk standing independently as a piece of furniture is used in small village or branch libraries. If readers pass behind it, the assistant is disturbed, and

there is no protection of its contents. If the work space behind it is not accessible to the public,

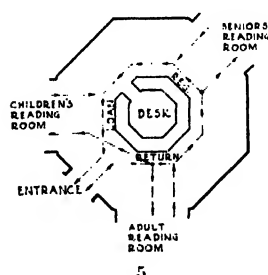
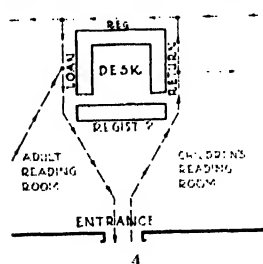
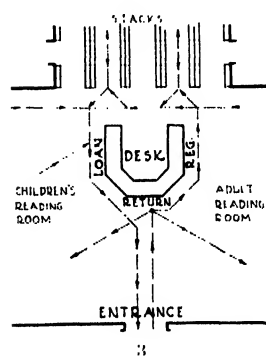
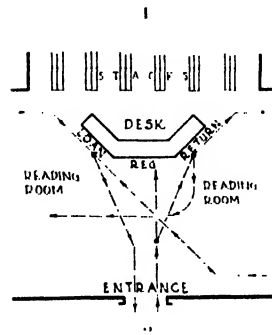
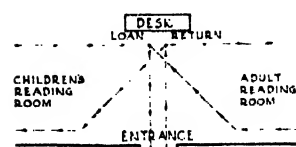
the desk can be much longer, permitting a free efficient flow of work.

2. The wing desk is slightly larger than the straight desk and gives a measure of protection to the assistants behind it. The three angles help to differentiate the three major parts of the work. Such a desk, and units for its enlargement into a U-shape, are stocked by the equipment companies.

3. The U-desk is very simple, convenient, and most popular. Protection of assistants and material from the public is considerably in-

creased. Corners inside may be square or diagonal; square is more efficient, though diagonal is often chosen.

4. When the desk stands farther out in the room, with readers passing freely around it, a rear unit is needed to protect staff and material. This is the island desk, the most efficient type for handling work that would otherwise be done in a separate workroom. The staff is isolated, so considerable space is required. Inside corners should be



square, to give the most space and permit extension, though outside corners can be diagonal or round, since they are not usable for drawers, storage, or footspace.

5. The octagon derives from the square desk, fitting a smaller area but losing much interior space and crowding the staff. There is less freedom in arranging fittings, and it is difficult to enlarge. Circular desks are expensive and have the same objections.

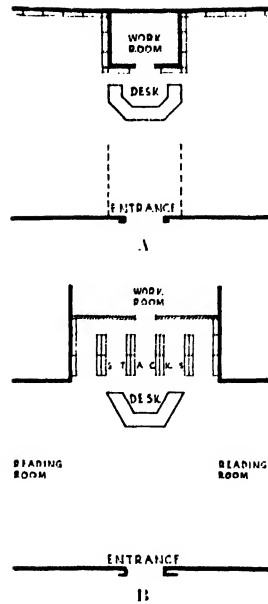
DESK, ENTRANCE AND WORKROOM

The shape and arrangement of the desk and its relationship to entrance, supervision, stacks, workroom and light source form one combined problem.

The ideal location for the workroom in a small library is close to the desk; and the ideal location for the desk to secure control, efficiency, and economy is close to the entrance. Desk and workroom should be together to save time in the constant moves between two types of work, and to permit the one assistant, who may be on duty alone during a considerable part of the working day, to give service to the public at the desk, and also to carry on her "behind-the-scene" work connected with processes 1 to 10 listed at the beginning of this chapter. If the work with the public and the work behind the scenes are separated by too great a distance, waste, fatigue, and lack of control result. Desk and workroom are more efficiently related in some of the following arrangements than in others. These types should be studied in the light of the discussion of workrooms in Ch. 18.

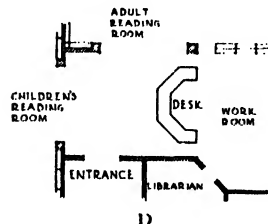
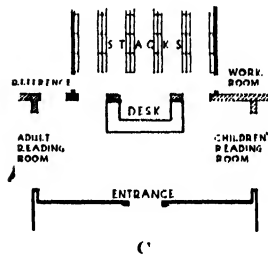
Desk Facing Entrance, and closing central vista.

(A) Desk facing entrance; workroom directly in back of desk. Compact and efficient. There are many examples in Chs. 23 to 25, such as Paxton, Mass.; Roselle, N. J.; Waban Br., Newton, Mass.; Parkman and Mark Twain Brs., Detroit; Concord, N. H. (B) Desk facing entrance; workroom behind with intervening stack. Time lost between workroom and desk in changing work or getting material.

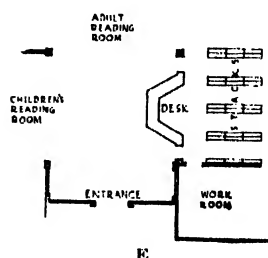


other examples in Chs. 23 and 27.

Desk at Side, clearing central vista and avoiding the objection that a person entering is confronted by the desk; but the two traffic streams entering and leaving conflict.



both wings; stackroom behind it and workroom flanking the stack. Time lost between workroom and desk. Examples, many of the Ell plans, Ch. 25.



("There goes the telephone. I wish it were here at the desk," or vice-versa.) These stacks may or may not be open to the public. See Boylston and Mattapan Brs. Boston; Irving Br., Brooklyn; Sanger Br., Dallas.

(C) Desk facing entrance; workroom diagonally in back of desk. Sometimes in the rear corner, sometimes closer. Liberty Street Br., Springfield, Mass.; Great Barrington, Mass.; Washington Irving Br., Los Angeles, and

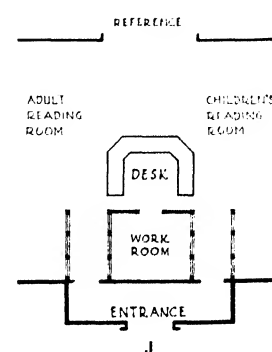
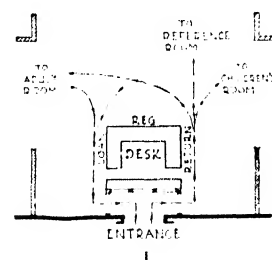
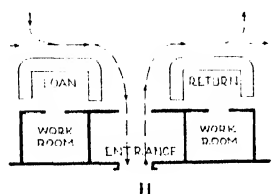
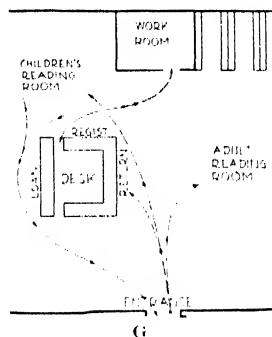
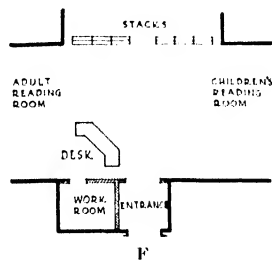
(D) Desk at the side, on cross axis, overlooking both wings; workroom behind it. Example, Carnegie "C" Plan; Martin Library, York, Pa.; many of the Ell plans, Ch. 25.

(E) Desk at the side, on cross axis, overlooking both wings; stackroom behind it and workroom flanking the stack. Time lost between workroom and desk. Examples, many of the Ell plans, Ch. 25.

(F) Desk set diagonally beside entrance; workroom at side of vestibule. Desk stands clear, as a piece of furniture, independent of the architecture. Tulsa Branches.

Desk Isolated, encircled by traffic.

(G) Island desk. May be in any position near the center of circulation space. Public passes freely around it. Always a closed form, square, rectangular or octagonal. Generally supervises a surrounding group of reading spaces. Usually distant from workroom, so must provide generous space for typing, etc. Examples: Highland Park, Ill.; Santa Barbara; West Toledo Br.; Hall Br., Chicago.



Desk Divided, traffic between the two parts.

(H) Desk divided; appropriate to large libraries; return desk at right; charging desk at left; each with a workroom behind it extending to the outside wall. Los Angeles, Baltimore, Rochester, Toledo, Brooklyn.

Desk Reversed, encircled by entrance traffic.

(I) The reversed desk is backed toward the entrance. The circular route for readers reduces confusion and crosscurrents. Being close to the front entrance, it controls the entrance, oversees the entire room and does not confront the visitor. It is difficult to closely relate it with the workroom. Example: Howe Br., Albany; recent Los Angeles Brs. (J) The reversed desk-workroom combined is

like the preceding with the introduction of a small glazed workroom between desk and vestibule wall. In many ways the most effective, though the workroom is limited in width to the space between the vestibule doors. Examples: Bridgeport and Providence Brs.; see also series of six plans in Ch. 18.

Types I and J do not escape the criticism of those who insist on a direct entrance with the circulation desk and staff routine removed from the first view of the visitor. If there are two outside doors, directly opposite the vestibule doors, permitting direct ingress and egress, this objection is mitigated (e.g., Newfield Br., Bridgeport). Type J uses space for the workroom that is wasted in type I; the desk is set farther from the entrance, allowing space for the lines of children to form at the return desk during the after-school rush, a necessary provision for rainy weather. Clear glass can be used in the workroom partitions to secure supervision of reading rooms and entrance when the assistant is occupied with work inside the enclosure. Supervision is most effective when people are leaving, for everyone passes around the desk and faces the assistant when leaving. These types are discussed more fully in Ch. 18 on Workrooms, and in the plan chapters, e.g., Petworth Br., Washington; Bridgeport branches and others.

WORKROOM ACTIVITIES

In smaller buildings it is well, if possible, to locate the workroom so that it may be used by all departments, thus combining work and saving time. First of all, the workroom should be close to the circulation desk. Then, if possible, planned with a door connecting it with the reference department (Homewood Br., Pittsburgh, Pa.), or with the children's room (East Side Br., Gary, Ind.; New Br., Monterey, Cal.) or, in a large building, with a door which can serve all three departments equally well (West Toledo Br., Toledo, Ohio). The final decision will require much thought to meet the many requirements, keeping in mind the constant shifts from one part of the work to another, especially in the circulation department.

Why all this workroom provision? Like the American kitchen, the workroom in the library circulation department is coming into its own through study and analysis. An adequate workroom is a permanent economy. A group of trained junior librarians could profitably investigate workrooms, work space in circulation desks, or the design and equipment of enlarged circulation desks that combine workroom and desk activities. Obviously the workroom has grown in size and importance as a time and money saver for the library.

RELATION OF DESK TO STACK

It is well to have the service desk and its staff near the stack, but nearness to the entrance and to workroom comes first, nearness to the most heavily used books on open shelves comes next, and to the stacks last. This assumes the stacks contain the books least frequently handled by the staff. Though bound periodicals will not require as many staff trips a day as popular fiction, many libraries that have built up an efficient reference service have brought the last five years of their most-used indexed periodicals close to the reference desk, discarding antiquated fiction and non-fiction, and moving less-used non-fiction into the stack.

In larger buildings, especially central libraries, the problem of servicing the stack from the circulation desk involves: (*a*) the possibility of employing inexpensive page help during rush hours to avoid using the regular staff for this purpose; (*b*) the library's policy and practice in relegating outdated books to the stacks; (*c*) the responsibility of other departments, especially the reference, for finding, fetching, and reshelving stack books. Cost in time and salaries needs to be estimated in deciding whether the desk need be near the stacks.

FETCHING BOOKS FROM STACK

In large libraries increased stack capacity intensifies the problem of transporting books by hand. Only in very large buildings is this handled mechanically; the cost of horizontal trans-

mission machinery is still excessive. Smaller buildings are forced to be satisfied with pages.

If the stack is in the rear of a large library and the desk is near it, there is a long distance for the reader to travel from the entrance to the desk. If the desk is brought forward it is too far from the stack, requiring a loss of time in delivering books to the reader and unwarrantable cost for this service. The late Edwin L. Tilton, familiar with many library buildings, felt this to be a serious weakness typical of the older rear-stack buildings. At Somerville, Springfield, Wilmington, and Baltimore he arranged the book storage in a large horizontal area immediately below the main service floor, tapping it by frequent short, narrow stairs and book lifts, so that the books serviced by any public department would be in close proximity. This subject is elaborated in the chapter on stacks.

THE OPEN-SHELF ROOM

The term is misleading because more and more libraries place the greatest possible proportion of currently used non-fiction on shelves open to the public in the reading rooms. Though in some libraries the general reading room is called the open-shelf room, this term is better applied to a room in which recent and interesting books, both fiction and non-fiction, are displayed for selection and borrowing, generally with little provision of tables or chairs.

The circulation room with its desks and catalog may contain the open shelves, or they may be in an enclosed space at a short distance from the circulation room and not far from the entrance—a single large space or two or three small ones, each with its own type of books, fiction or non-fiction. Small alcoves are rarely seen now; they are a chief source of theft, mutilation, and disorder, especially by high school and college students. One large library has for years brought to the open-shelf room subject blocks of books from its stacks for a three- or four-month period, when they are followed by other blocks of books. The result is always a spectacular rise in the per volume circulation of the displayed books.

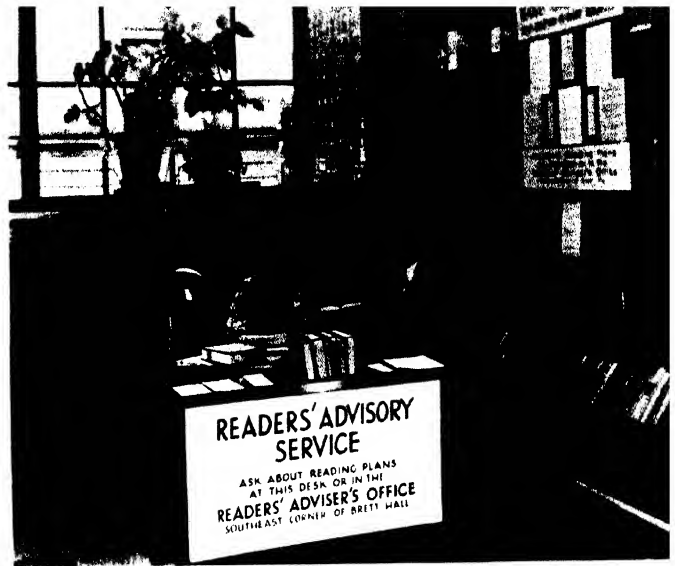
READERS' ADVISORY SERVICE

This recently developed activity of larger public libraries involves a full-time, capable, professional assistant, thoroughly acquainted with books. The reader sits in a comfortable chair at the adviser's desk located conveniently to the public, and leisurely consults her as to his needs and receives recommendations about books carefully chosen for "reading with a purpose" or reading in sequence.

Just where does the line fall between this and the usual library services? The psychological element of individual attention is provided best by a certain feeling of privacy between the interviewers. It is not met by letting a reader stand before a public service counter and ask his questions. This attention to and guidance of purposeful readers deserves proper space and equipment. Material gathered at A.L.A. headquarters, July, 1938, as a result of the present authors' request, showed that the readers' advisory desk is often placed in some corner of the circulation room, or the popular library, close to the adult crowds, to the catalog, to reference tools and circulating non-fiction. But readers are not at ease when privacy is lacking, and their conversation disturbs others. This service should be in an alcove off the lending department, next to the adviser's personal office. The alcove should be book-lined, with comfortable chairs and tables. Space may be partitioned off in a busy corridor where it would otherwise be wasted.

The general information desk, near the public catalog, where the assistants help readers use the catalog and assist them in getting what they want from the proper departments of the library, is not an appropriate post for the adviser.

The ideal provision is an isolated or well enclosed space located as just suggested, perhaps 10 to 20 feet square, with rugs and an inviting chair, with a consultant's desk and an informal grouping of unobtrusive furniture for indexes, book selection guides, and files of printed, mimeographed and typewritten lists on all subjects. The timid reader is more likely to approach a desk in some rather quiet open cor-



Readers' advisory service at Cleveland is handled at two main floor points, both having a certain privacy and quiet and an attractive array of books, thus meeting the two chief requirements. This shows the service desk in a corner of the Popular Library. The main office for the Readers' Adviser is a secluded alcove opening from Brett Hall, the centrally located magazine reading room.

ner than to come into a very private-looking separate office where someone else may already be waiting or consulting. The space for the readers' adviser, herself, should evidently be somewhat separated also from any bookshelving among which other prospective readers are to browse. It may or may not be set off either by a complete wall or a glass partition or cases.

EXHIBIT CASES

Free-standing cases of the prevailing woodwork, or glass standing cases of metal trim, or lighted cases recessed in the walls and piers, small shelves at bookcase ends—all these may well be provided, so that the circulation room may have variety and interest. See Ch. 21 for details.

DECORATIONS

Decorations which draw sightseers have no place in reading rooms intended for study and concentrated book use. They may be placed appropriately in the circulation hall if it is not also a reading room. Here, where people are coming and going, stopping at lending and return desks and not requiring complete quiet, there is an opportunity for painting and decoration, provided each element is worthy and appropriate.

CHAPTER 14: READING, REFERENCE, AND STUDY ROOMS: THEIR PLANNING

To clarify the arrangement of this long chapter we give an outline of its contents:

1. THE REFERENCE ROOM

Functions

The provision for reference in the reading room of the small library

The reference alcove

The separate room

Types of materials and readers

Proximities. Location. Quiet and seclusion

Equipment

Service desk and workroom

Example of reading *vs.* reference rooms

2. SUBJECT AND SPECIAL REFERENCE ROOMS

Principles and relationships

Individual subjects, *e.g.*, art and music

Special collections

Individual study rooms—Carrells

Intermediate reading room

3. READING ROOMS

Functions

Proximities

The general reading room

Browsing room

Periodical room

Newspaper room

Outdoor reading room

4. LIGHT; HEIGHT; DIMENSIONS; TABLE AND READER SPACING

IT is impossible, because of the diverse conditions, organization, and activities of libraries in various-sized communities, to draw a sharp line between two fundamentally different purposes: (*a*) to effectively aid the reader who comes to find definite information for a definite end and requires the books, the staff assistance, and the table working space to read or study or copy; (*b*) to provide for those who come to sit and read for pleasure and sometimes without much other aim, though occasionally to read on some definite subject but without the use of any "tools" or staff help in getting their material together.

It is hard to go further with the distinction between *Reference Room* (*a*), and *Reading Room* (*b*). Either room may contain a large stock of circulating non-fiction, although a reference room seldom does; both will contain a supply of magazines, or else magazines must be brought in on request.

"*Reference Book*" is one of the most vaguely used terms in the profession because it is generally recognized that nearly every non-fiction title in the so-called "circulating books" has po-

tential reference value, and no skilled reference librarian overlooks this fact.

Various published definitions of "*Reference Work*" fail to cover its aspects.¹ A distinction between using books within the building and borrowing for use at home is not valid because there is much general reading within the building, while persons often wish to borrow books or periodicals containing a page or chapter of concise detailed fact whose existence they would not have been aware of except for the reference work done by the staff. A vast amount of reference work is now done for those who immediately borrow the books for home or office use.

Staff participation in helping readers find what they want is growing faster than circulation because the reference habit is increasing rapidly on the part of the general public.

1—THE REFERENCE ROOM

The purpose of "*looking up*" definite information underlies the function of the reference room. Here are the varied accommodations, the

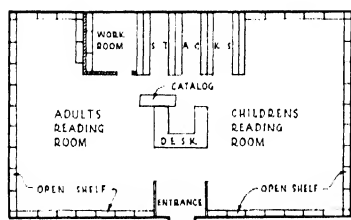
¹J. I. Wyer, *Reference Work*. A.L.A., Chicago, 1930. p. 4, quotes several definitions.

printed materials or "tools," and the staff to help readers find this definite information for some specific purpose or occasion. Conversely, research and study, whether brief or extended, is the reader's main purpose and activity, whether he sits in the room to read or borrows the book.

PROVISION FOR REFERENCE SERVICE IN THE SMALL LIBRARY

Functions and relationships change as buildings increase in size. In a small building the desk, readers, bookstock, and staff may be all in one large room equipped at one end for adults, at the other for children. The adults' portion then becomes a combination of reading, reference, and open-shelf room. Its advantages are manifold; supervision is simplified, for there is not the need of assistants to supervise small rooms; encyclopedias and other reference tools are all together with the general circulation collection. In a small town or branch library circulating not over 100,000 volumes annually, this is undoubtedly the most economical arrangement.

The first splitting off of the service staff will come by setting up a special small desk conve-



nient to the greatest number of non-fiction books. Near-by bookcases will contain encyclopedias, dictionaries, atlases, and other handbooks and strictly reference volumes. The assistant may be assigned to this desk only at busy hours. This is the reference desk.

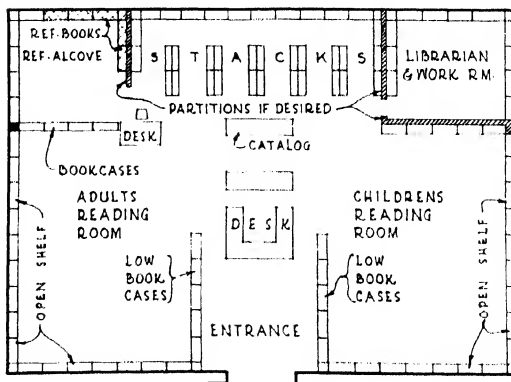
Generally it will be placed on the adult reading-room side, but in some communities where adult book use has not been developed and the high school is near, the preponderance of reference work, especially in later afternoons, will be with junior and senior high school pupils,



Birmingham, Ala., reference room is an example of an economical, plain treatment, narrowly escaping dullness. Bookshelves, doorways and equipment designed in a consistent spirit; repose and quiet in the even continuity of bookcases and doors. Efficiency would be improved if windows were extended to the ceiling between the beams, and lighting fixtures more closely spaced. Direct lighting gives most light for the least current but not the pleasantest reading light. Plain swinging doors with kick-plates and oval vision-panels are always satisfactory. Readers favor Windsor chairs like these. Miller and Martin, architects. 1927.

whose use of adult reference books is most disturbing in the adult reference room. In these cases, it may be more effective to locate the desk

Reference Corner or alcove. The workroom and office wall may be separated by a full height, hollow tile or stud partition. If glazed it would give supervision of readers. The enclosure for reference alcove may be of low or high bookcases, single or double faced, against the adult reading room, glazed to ceiling if desired. A solid wall will not permit future shifts, and it is almost impossible to predict the proportion of quiet study space that will be required. Balancing the size and wall treatment of the two corner spaces is usual. A balcony or mezzanine level to double the number of bookcases might be considered.





At one end of the West Toledo branch three adjoining spaces all partially screened from the main room give supervised privacy for small groups of readers. Note the display rack, the settee flanking fireplace at right. No table in the alcove, the chairs backed up around the floor lamp. The bookcase has concealed cornice lighting. Gerow and Conklin, architects. 1930.

on the children's side. But if the library has built up a spirit of well-disciplined quiet and orderliness, it is better to combine adult and high school reference work and desk on the adult side.

REFERENCE ALCOVE

The early Carnegie diagrams and the small libraries inspired by them have a reference alcove adjoining the adult reading space, with a range

considerable stock of non-fiction, including periodical volumes, is close at hand for both adult and high school reading and reference work.

THE SEPARATE REFERENCE ROOM

The decision to segregate the reference department and the degree of separation depend on the probable extent of use, the closeness of the other book collections, the preponderant type of users—high school, college, industrial, noisy or quiet. In general it is more economical of administration and more effective in book use to keep services, collections, and space undivided until a separate reference room is plainly needed.

Reference deserves its own partitioned space in libraries serving populations over 30,000 or lending more than 300,000 books per year. Flexibility may be preserved by using glass screens over bookcases, or hollow tile partitions, free from piping, etc., so that in 10 to 15 years they may be shifted. The A.L.A. Survey of 1926, from its incomplete returns, showed the following relationship between reference and circulation departments in four size-groups of cities.

This makes it evident how few small libraries have a separate room, and how few, large or small, put the reference and circulation department on different floors.

REFERENCE MATERIALS

Before considering proximities, or the relations between this busy room and its companions, we need to consider more fully the materials involved in reference work, for not all of them can be kept in the room itself. As has been noted,

REFERENCE DEPARTMENT	BELOW 20,000	20,000-50,000	50,000-100,000	100,000 UP
As part of general room.....	305	15	10	1
As an adjoining or adjacent room.....	224	128	39	38
On another floor.....	2	9	10	19
	531	152	59	58

of bookcases to separate it from the general confusion and movement. The removal of reference work from the reading room comes most naturally through this simple arrangement where a

adequate reference work involves the use of practically the entire library collection. The notion that the best information on any subject is to be found only in a strictly reference book,

like an encyclopedia, handbook, dictionary, or compilation of condensed facts, is an error. The best information, brief, specific, up-to-date and exact, may be found in circulating books, bound or unbound periodicals, bulletins, documents, or in the ephemeral material arranged in vertical files. The fact is that the usual collection of adult non-fiction contains a large number of books of comprehensive detail, many textbooks, for example, which will be used for reference work. This joint use of reference and circulating books is discussed further below under Subject Departments.

However, certain books, usually comprehensive in scope and condensed in treatment, are arranged to facilitate the finding of definite facts rather than for continuous reading and are called "reference books" in the strict sense. The stock of a well-equipped reference room will contain: (a) quick reference books most frequently used, such as encyclopedias, yearbooks, almanacs, dictionaries, handbooks, outlines, biographical dictionaries, directories, and many others; (b) reference books that point the way to information, e.g., indexes and bibliographies; (c) the current and recent (perhaps five years') bound files of the important periodicals, especially those indexed in the *Readers' Guide*; (d) as many selected non-fiction books as can be shelved, the best treatises on their respective subjects; many textbooks on topics in great demand, authoritative, full of facts; (e) vertical files for pamphlets, clippings, etc.; (f) possibly atlas and map cases, etc.

In this collection the element of timeliness is vital; provision should be made for constant additions and for corresponding withdrawals and transfer of out-of-date books to the stacks. Every inch of shelf space is at a premium in a reference room, and all piers, paneling, or trim that encroach on bookcase space are detrimental to the service.

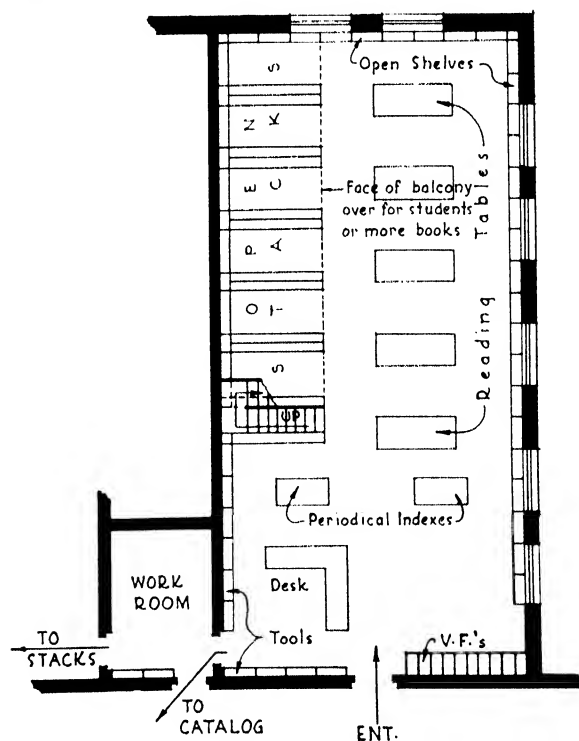
QUIET AND SECLUSION

Noise is another factor influencing location of the reference room or any special subject read-

ing and study rooms. All reference librarians emphasize the high value of quiet within the room. This precludes the combination of reference and popular reading room, and certainly the lending of any books therefrom. It should not face the car line nor a noisy street nor be next to a busy noisy room, such as children's, or circu-

Typical small reference room. Tools for the work carried on by the reference staff from morning until night will be assembled close to the main service desk. The group of condensed reference volumes will be shelved behind the desk whether or not the workroom adjoins. Quick access to departmental workroom, stacks, and public catalog is highly desirable. The periodical indexes, used jointly with readers, may be placed on special cases close to the service desk but out in the reading room to encourage readers to do their own searching. Vertical file material, increasingly important, should be near the desk or in the adjoining workroom or stack room to save staff time and reduce indiscriminate public handling.

In this and the two adjacent diagrams the rooms are equipped with 6 or 9 ft. double-faced bookstacks at right angles to the wall, giving a considerable stock of reference material jointly used by public and staff within a short distance from the desk. A balcony may be used for an additional tier of books or for individual study tables for continued research.



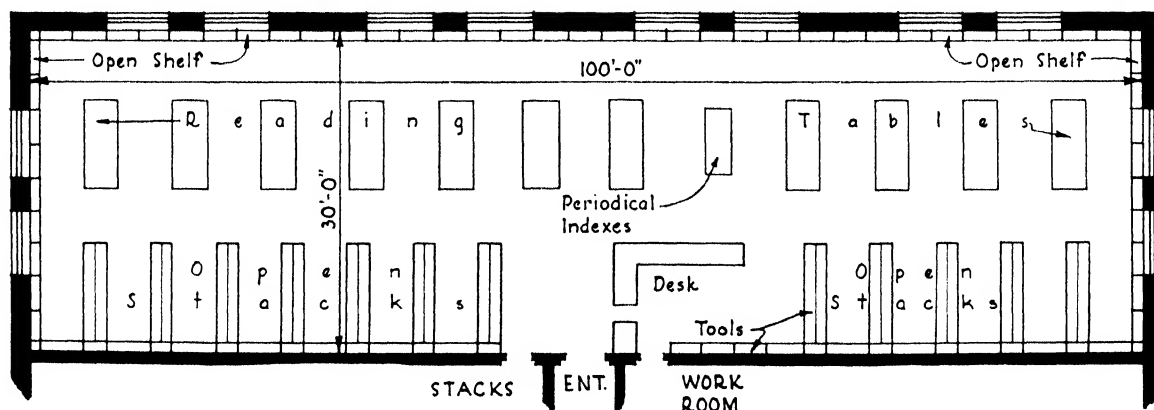
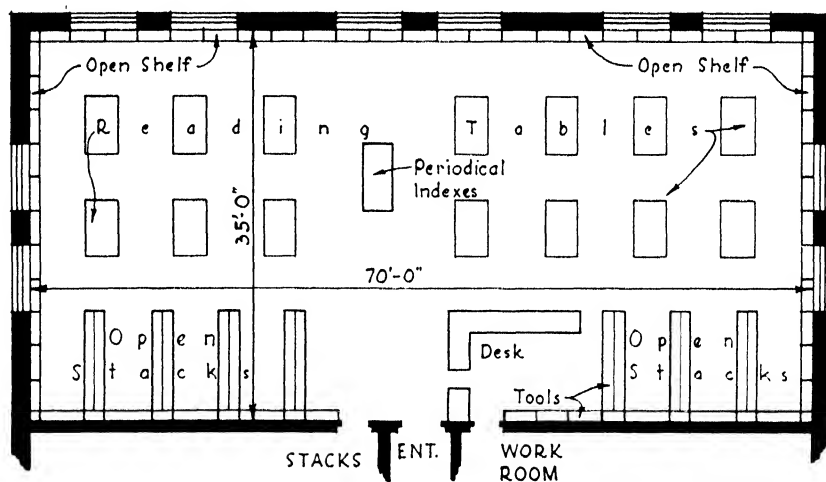
lation, nor serve as a passage to another room; it can have doors and not merely openings to separate it from other rooms; it can be omitted from sightseeing tours; its walls and ceilings can be elaborately sound-absorbent.

Background noise, such as street and other outdoor noises and constant mechanical noises such as fans, ventilators, etc., may be extensive but is almost uncontrollable.² Location can avoid some of this. Service noise, produced by people moving about, opening and closing doors, catalog trays and vertical files, moving chairs, and telephoning, can be reduced by giving care to details of the furniture, and to some extent by instructions to readers. The sound of typewriters, telephones, conversation, in workrooms adjoining or on another level and audible via stairways, may be shut off by carefully planning special doors, glass screens and other devices.

On this question of noise and distraction, practice and theory offer very opposite examples. In the great public room on the second floor in Philadelphia, reached by the magnificent stairway, one is astonished to see a combination reference and circulation room; within a few feet of the circulation desk where people are coming and going, others are sitting quietly at tables concentrated on reference work. Or so they appear, for it must be admitted that there is a good deal of mental wandering, as their eyes indicate from time to time when they watch the crowds of borrowers. But complaints from these students are infrequent. The noise is muted by the very size of this room. The Baltimore library is located in a downtown district with heavy automobile traffic on three sides, its main floor

²McDiarmid and Tatum, "Library noise," *Lib. Quart.* 8:200-09, Apr., 1938.

The shorter, deeper room is more efficient for service, but contains fewer books. Even with the entrance and service desk at the center, the difficulty of supervising the ends and time lost in bringing books from the corners of the long room are considerable; the cost of placing secondary desks where assistants can help readers is excessive, for no assistant can work profitably without access to her colleagues and to the common indexes, catalogs, etc.



reading and reference rooms opening directly into the large central hall with hundreds of people moving about. The noise comes to the student's ear as a sort of subdued general hum and seems to cause little discomfort or comment from the crowds who use the tables daily, and whose interests were placed first in the planning and servicing of that building. If future need arises, the reading rooms can be shut off from the central hall by plate glass screens to the ceiling.

At Columbia University real quiet is obtained by removing from the large reading room to the adjoining reference room all the indexes, telephones, conversation and confusion. Similarly in the departmental reading rooms service desks and tools are close to entrances, and screened off from the reading tables by glass partitions.

As psychologists point out, it is sudden sharp noise and movement which disturb, not a steady general combined volume of noise. This is poor comfort, however, to offer the occasional high-strung or fastidious reader who yearns for a cloistered retreat.

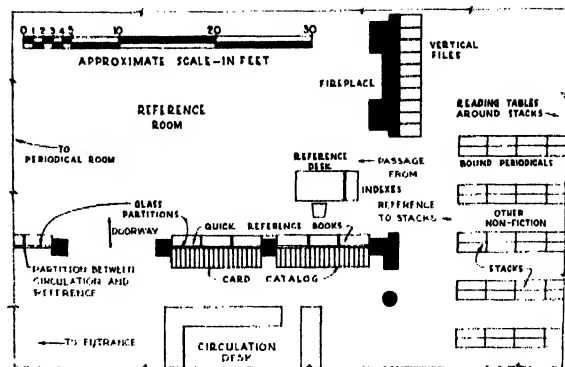
At Evansville, Ind., Baltimore, and West Side, Grand Rapids, and perhaps elsewhere, students are not conscious of the passers-by who look through the partly screened sidewalk windows and see their fellow citizens hard at work at the library tables (effective publicity for an important type of library service).

PROXIMITIES

The reference department, like circulation, draws on every resource of the library. No formula can be given for locating it in the plan, except to get it on the main floor near the rest of the non-fiction rooms. Good light and quiet are next in importance. The following proximities are given in the order of importance,³ and all of them, whether materials, rooms, departments, or equipments, need to be nearer to the general reference room than do the newspaper reading room, children's room, any staff rooms, the librarian's office, etc.

1. *The Public Card Catalog.* This takes prece-

³Based in part on J. I. Wyer's *Reference Work*, Ch. 19.



Compact reference room corner, Youngstown. The reference desk is close to the public catalog and bookstacks, which are even closer to patrons of the circulation department, who can look through the glass screen walls into the reference room and quickly enter it. Vertical files stand behind the fireplace wall, with recent bound periodicals in the first bookcases. So the chief reference tools are close at hand. Charles F. Owsley, architect, Anna L. Morse, then librarian. 1909.

dence over all other candidates for the position nearest the reference room desk. Little reference work can be done without it. While it is equally useful to the circulation department, the two are often adjacent and the catalog can be placed between. When separated, the catalog usually stays with the circulation department. One justification for placing a reference room on the second floor of a large library, with circulation on the first, is sometimes stated to be the proximity of the official catalog (the working catalog of the catalog department, a duplicate of the public catalog downstairs). This assumes that the catalog department is also located on the second floor, so the trays may be used by the catalog staff and reference staff in common. Unless the readers, too, can use this catalog, it is only partly effective. With this arrangement there is a temptation to make the official catalog more complete or up to date than the public, which is bad practice, reversing the proper relationships.

2. *The Circulation Department.* This means not the service desk for lending and returning, but the chief stock of circulating non-fiction usually shelved in the same room as the circulation department, perhaps called "Open-Shelf

Room." It cannot be overemphasized that this general live non-fiction stock is indispensable for reference service. A considerable number of substantial non-fiction books are duplicated in the reference room itself.

3. *The Stacks.* The reference department must draw on the older non-fiction shelved in the stacks. This distinction in the type of books, their age, subject matter, popularity, and therefore their location, is something to be carefully weighed by each individual library.

If the library securing a new building is in effective operation already, the heads of the reference and circulating work should study the entire bookstock and its probable division, recommending what types of books are to be housed in the reference room itself, in the circulation department, and in the stacks. Their recommendations must be weighed by the librarian.

4. *The Periodical Room or reading room that includes periodicals.* It will be noted that many reading rooms contain a much larger proportion of periodicals than of books, including the bound volumes as well as the current issues. Latest issues will be frequently called for in the reference room, and this suggests the advisability of duplicating important magazines to make copies available in both departments. Leisure readers are often offended by having their copies borrowed for even the most important reference work in some other room. The machinery of indexing current issues of periodicals is now so effective that *Readers' Guide* and other indexes cover many magazines appearing simultaneously with the current index itself.

The bulky bound volumes of periodicals indexed in *Readers' Guide* and elsewhere occupy considerable space, but they must be quickly available to the reference room. If they cannot be handled by pages, mechanical devices such as dumb-waiters, carriers, etc., are available for a large library. The splitting of bound files so that those for the last 3, 5 or 10 years may be in or close to the reference room, should be considered, even though older volumes are at a considerable distance.

5. *Vertical Files of pamphlet material.* Pamphlets, clippings, bulletins, and other ephemeral data arriving daily may be of the highest consequence for a few months, and then discarded. The proportion of space given to vertical file material has been rapidly increasing, but no library has devoted enough space to it yet, nor enough in proportion. Baltimore, perhaps as generous as any, found its 159 cases, 695 drawers in public departments and workrooms already crowded after 3 years. As many cases as can be built into the reference-room walls or standing in the room itself should be supplemented by files located as close as possible in adjoining rooms or stacks.

6. *Document Collection or Room.* Documents are reference material. Hundreds of documents are essential even to small libraries, thousands to larger ones. Most are bulky. They may not be in such constant use as periodicals, annuals or newspapers, but many titles which really are reference books should form part of the reference-room collection, even if those in the regular document file must be duplicated. A separate document room or even a separate complete document collection is less favored than in former days.

7. *Newspaper Collection.* Recent local newspaper files and those of the *New York Times* (the only American newspaper which publishes a full index, and therefore of daily reference value) must be near the reference room. Moving them involves considerable wear and tear. Probably special trucks will be developed on which to place such volumes to wheel them from their stacks into the reference room for consultation directly on the truck. The difficulties of getting bound newspapers from a distant stack to the reference room are great and attended by excessive wear, especially if a dumb-waiter is used. Libraries are increasingly restricting the use of these volumes, for abuses have practically destroyed many of them. Irresponsible persons looking up racing records and stock market reports, together with high school and college students doing so-called "research" have no hesi-

tation in cutting and tearing pages. A number of libraries buy and bind several duplicates of current newspapers, laying them away for a period of years when the first copies will have been worn to shreds.

EQUIPMENT

The reference department shelving and furniture need much more study than they have usually received. Following are the principal items, which are discussed in further detail in Chs. 41 and 42, Shelving and Furniture. Libraries having no subject departments should check the equipment items below under technical, art, music and local history departments.

Reference Desk: An ordinary large flat-top desk appears to some as desirably informal, but a busy reference room requires a large, specially built desk, preferably in L-shape, with linoleum or wear-proof top, shelving, index trays, vertical file trays, etc., arranged according to the route of readers from door-to-desk-to-tables.

Shelving: Standard adjustable shelving, against walls and free-standing; shelves 10" deep; tilted lower shelves especially desirable in reference rooms because the lettering on the books must be scanned carefully. Much material will be 14" and 16" high.

Periodical Shelving: If reference work is in a general reading room, this shelving should be either flat or sloping for current issues. If used strictly for reference, recent and current unbound numbers may go in pamphlet boxes standing on shelves next to their recent bound files.

Bookcases with Locked Doors: For handbooks and other small books that may be stolen.

Periodical Display Case: Desirable only when reference work is in general reading room, as it will attract leisure readers.

Consulting Stands: For most-used atlases, dictionaries, encyclopedias, periodical indexes, and directories. The placing of these, if over 4' high, must not cut off the staff's view of readers who otherwise are tempted to conversation and defacement of books. The most-used items, such



Main Reading Room, University of the Witwatersrand, Johannesburg, South Africa, showing individual high chairs and tables, reading spaces set off by low shelving, informal division of bookstack from reading room, and the use of upper wall space for book gallery, a practice much favored in Europe, especially in Scandinavian countries.

as magazine indexes, need sufficient elbow room for several persons at a time at shelf or table.

Vertical File Cases: In adequate number—8 or 10 cases, 4 drawers high, per 100,000 circulation at branches; 10 to 15 per 100,000 circulation at centrals. This is a rapidly growing need.

Map Cases: For selected, most-used maps; possibly a roller rack for wall maps.

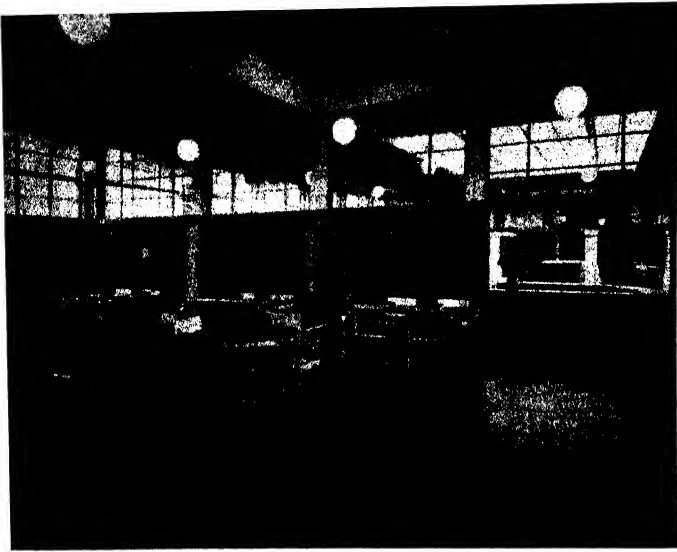
Readers' Tables: For 4, 6 or 8 readers each; a few individual tables in a quiet corner or on a balcony.

Card Cabinets: Assuming the public catalog is available, additional cases are needed for special indexes of various sorts, kept up by staff. Allow 10 trays per assistant; this is discussed also under subject departments below.

Globe: The largest size, designed as a beautiful piece of furniture, kept clean, and relinquished from time to time, is an attractive feature.

REFERENCE DESK AND WORKROOM

The department's own workroom needs to be as close as possible to the reference desk, which in turn must be as close as possible to the public entrance. Often this competition for the use of the limited floor space near the entrance means placing some of the work on a mezzanine above or below. Subject to the foregoing major proximity, the desk and the workroom



Reference Room, Public Library, Scarborough, England. Efficient control from the desk. Glazed partitions transmit plenty of daylight. Treatment interesting and frankly emphasizes function. Unfortunate that precious bookshelving is lost in order to express the continuity of the piers. G. W. Alderson, A.R.I.B.A., architect.

entrance are most efficient halfway down the room, so that the staff may supervise most effectively and have the shortest travel route to the ends. In a large library the department head's desk, perhaps glass partitioned, can be at a more distant point rather than in the workroom itself, but this means much travel. The workroom may be combined with or be separate from the desk, and the latter may be a large enclosed area or simply a long desk standing informally along the side of the room with numerous reference books and indexes shelved within or behind it. Here, as in the circulation department, time is saved by combining the work at desk and workroom. If the two can be close together, separated by a glass screen to hide the second group of activities partially from public sight and sound, it is most economical. (See Ch. 18 for Workrooms and Their Equipment.)

Placing the service desk conspicuously in the middle of the room inevitably causes distraction to readers. The service counter may be built into the wall, and the assistant's space, possibly the workroom itself, recessed into the adjoining room—behind the scenes. Some of these suggestions may result in the assistant's having to sit facing the strong daylight from opposite windows, or being so little in evidence to readers entering the room, as to offset the purpose of

keeping an area of noise and confusion out of the center of the room. Some compromise must be worked out by architect and library staff. The desk telephones, most annoying feature, can hardly be dispensed with in meeting the incessant public calls. A small recessed booth, or a screen around the desk telephone, with bell and mouthpiece muffled, helps a bit, if it has ample ledge space for writing, laying out books consulted over the telephone, etc.

The large amount of brief "ready reference"—the consulting of dictionaries and directories, the looking up of names, etc.—means a stream of very brief visitors, each question requiring personal attention. They might be handled at a quick information desk or "ready reference" desk outside the main reference room, but this is an expensive venture unless, as in a large library in cities over 200,000, the work is of sufficient volume to keep a competent assistant busy full time. In a busy library the information desk assistant cannot do this "ready reference" work besides her duties in servicing the public catalog and answering questions about the library itself. If efficiency and economy are the goals, all the reference work, both brief and detailed, will be handled within the reference room, but this will be at the cost of the quiet which so many readers appreciate. Only the regular reference staff can be sufficiently skilled in finding facts to insure the reader getting everything. Then, too, is the information desk to be attached to the reference department, the circulation department or the catalog department? This has a bearing on the scheduling of assistants, lunch hours, etc., and on interdepartmental relationships.

EXAMPLE OF READING ROOMS VS. REFERENCE ROOMS

The plan of the library at Berkeley, Cal., well studied and efficient, may be taken as an example to indicate the perennial conflict of demands for circulating non-fiction and bound and unbound magazines between the three classes of readers who wish the same books and periodicals for their three entirely different purposes—

to borrow, to look up reference questions, and for leisure reading in the library.

The main floor shows the distinction often made between a general public reading room, at left of central lobby, and a reference room, at right. "The reading room on the left is just that, a place for patrons to sit and read or look over the special displays of books (circulating). The current periodicals are here, and bound magazines most in demand for reading or reference." (Note the reference element entering this room and making a conflict of purpose.) "A number of such displays in book troughs and standing display racks, as well as duplicate books shelved against the wall, covering the ten decimal classes and fiction. The alcove room at the rear contains Californiana in locked cases; it is used also for a quiet retreat for writing and reading." (A subject reference room, in other words.) "The reference room" (at the right) "contains all the reference tools of the library and the reference service is given here."⁴

The reference office and workroom opens from the rear of the reference room but unfortunately is remote from the reference desk. Doubtless many volumes and unbound current numbers of periodicals at Berkeley are brought across from the reading to the reference room together with many non-fiction books from the

⁴From correspondence with librarian.

stacks at the rear, or else effective reference work cannot be done; certainly bound periodical volumes will be used more frequently than many so-called reference books. The reference materials are therefore scattered in three or four places, and use of many of them necessitates a trip to the reading room. As this first floor plan is referred to in several other chapters, the course of readers moving about for various purposes is here indicated by arrows, and the equipment is indicated by the explanatory key.

2—SUBJECT AND SPECIAL REFERENCE ROOMS

Still considering the paramount importance of "reference reader" satisfaction, we now come to a provision of space and materials intended to assure the person interested in a certain subject the latest material about it, with competent library assistance in locating elusive information. This is the start of "Subject-Departmentalization."

PRINCIPLES AND RELATIONSHIPS

In the larger library, reading rooms for various purposes begin to be separated, though individual readers would for many reasons prefer to have one vast reading room in which the entire book collection and service staff are available to help them find and read what they need. The

Main Floor, Berkeley, Calif.

J. W. Plachek, architect. 1931.

A—General Reading Room

B—Reference Room

C—Catalog

D—Desk

D1—Circulation Desk

D2—Information and Registration Desk

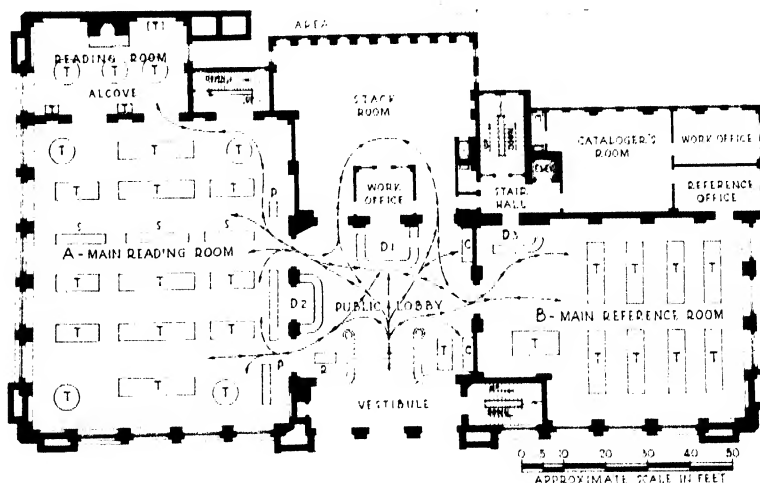
D3—Reference Desk

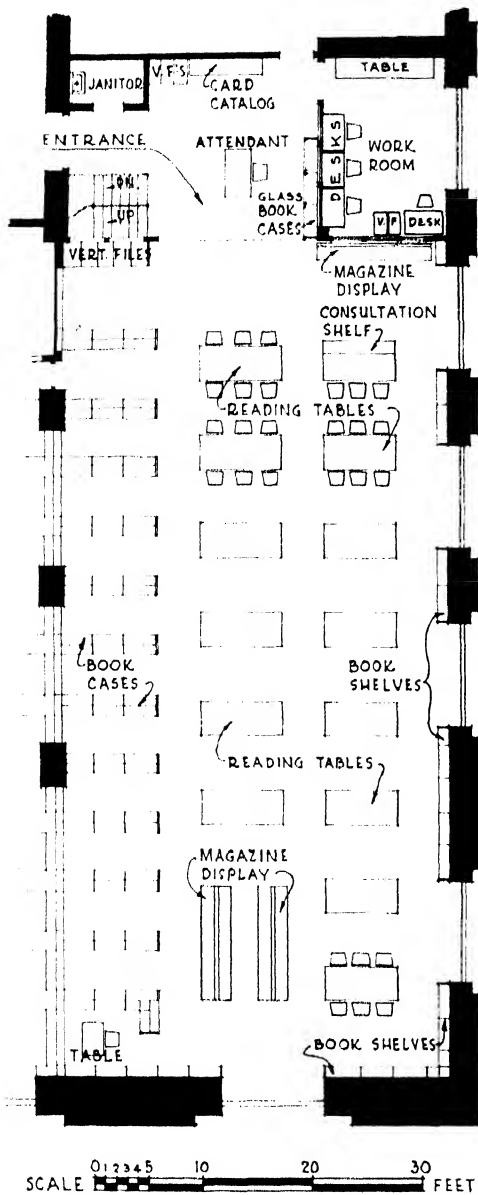
P—Display Cases

R—Readers' Adviser's Desk

S—Shelving

T—Table





Typical industrial and technical department showing large proportion of magazine display racks, and low glassed cases behind the attendant's desk for shelving handbooks and other volumes subject to theft. Double-face spur bookcases, 9' long, at inner side of room hold about 900 volumes each. Space supplemented by a mezzanine at the end and stacks below, convenient for the staff or for individual study tables.

impossibility of this in a large library is obvious, hence the breaking down of the stack and the staff in either of two very different ways. In the older large libraries, departments were split off according to physical form of material or to

possibility of its being lent—circulating department, reference room, document department, periodical room, reading rooms not for reference, etc.

"Were I asked to-day how to gain more use for reference books I should reply: when possible form subject departments with combined stocks of reference and home reading books, and put each department under librarians bibliographically competent to manage it. The case against the large central library divided . . . into two parts, one for reference and the other for lending, seems strong enough to justify a change of policy. To store books on the same subject in two departments is wasteful. We cannot provide two staffs of specially qualified subject librarians. Because we separate reference and lending books, we cannot provide specialists for any division. But with the stocks combined in subject departments special staffs ought to be within our means. Many books now in reference libraries might be used much more if we shaped our policy for the greater profit of readers . . ."⁵ English libraries are already on the way to combining circulating and reference books by subject, as in Sheffield's Industrial Department.

In America it is not a recent development. With the constantly growing number of intensive readers and students, their difficulty in using library materials according to the older arbitrary distinction by physical form has been increasingly noted.

The history of subject-departmentalizing has not been written, but the experiments of Cleveland and Los Angeles in temporary quarters, 1913, 1914, had much to do with it.⁶

The A.L.A. Survey of 1926 (v. 2, p. 85) in-

⁵F. A. Savage, "Subject departments in public libraries," *Lib. Assoc. Rec.*, 39:615-21, Dec., 1937. For other English comments on this organization of materials and service see L. R. McColvin, ed., *A Survey of Libraries . . .* 1936-37. London, 1938, p. 370, 491, 594-99. I. S. Jast, *The Library and the Community*. London, 1939, gives some of the arguments against the idea; p. 81-86.

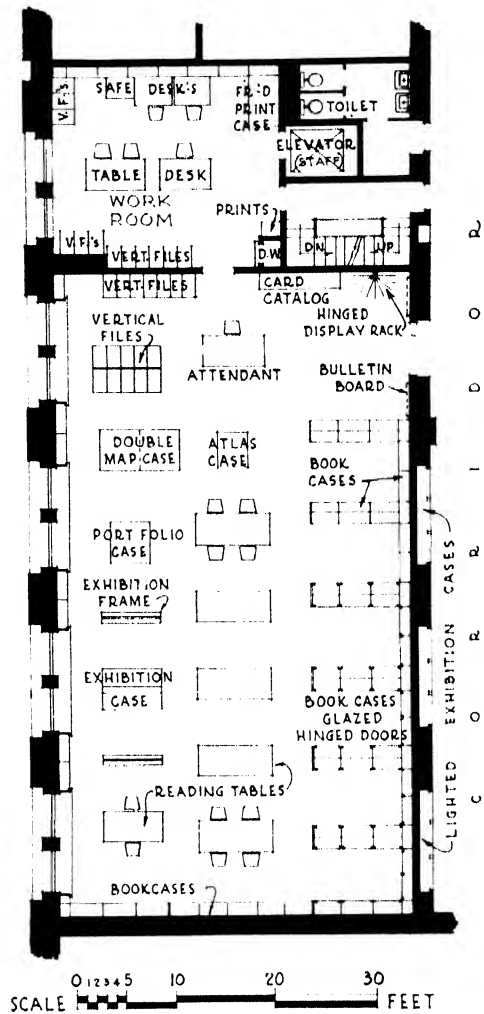
⁶Althea Warren, Departmental organization of a public library by subject, in C. B. Joeckel, ed. *Current Issues in Library Administration*, p. 90-134, Chic. 1939.

completely summarizes subject departments in various public libraries and shows that the most common subjects to split off are—technology, or science and industry, in some cases including business, 19 cases; art or art and music, 19 cases; history, generally including local history, 8 cases; genealogy, 8 cases; medical, 6 cases (it is important to note that the typical public library does not operate medical departments but sometimes houses the local medical society library); social sciences, including sometimes civics and documents, 6 cases.⁷ In addition there were several cases of special subject collections which had come as gifts, *e.g.*, the John G. White collection of folklore at Cleveland.

The Cleveland building gave further impetus toward subject departments in many large and middle-sized cities. Carried out fully at Cleveland, Los Angeles, Baltimore, Rochester, and Toledo, it has demonstrated a practical method for giving more complete service to the individual who comes for material on a given subject. It is true that the problem of classifying books makes it impossible to know always exactly where a subject will be classified, or whether its various phases will all be in one subject department, because of the ramifications of the subject itself. However, the solution of this difficulty in the comparatively small number of cases where it occurs is simple compared with the waste of time under the older plan of dividing materials into books, periodicals, documents, etc., or into circulating and non-circulating books. This statement is modified by the factor of distance between departments; related subjects should be near one another. One must study the route and time consumed for reader-trips

⁷In 1939, 30 public libraries had technical, industrial or applied science depts., 7 had business depts.; 9 others had business branches but not depts., and 5 had combined technical and business depts. See B. A. Osborne's list in *Special Libraries*, 31:93-95, Mar. 1940.

⁸Carl Vitz, "Administrative problems and cost of subject departments in large city buildings," *A.L.A. Bul.*, 22:430-31, Sept., 1928. M. W. Freeman, "Cleveland's divisional plan for reference work," *Lib. Jour.*, 50:843-47, Oct. 15, 1925. Amy Winslow, "Experiences in departmentalization," *A.L.A. Bul.*, 27:684-87, Dec. 15, 1933.



A local history department, showing large number of vertical files for clippings, pamphlets, photographs. However, neither files nor catalog cases are sufficient, in proportion to books, to accommodate the growth of indexes and elusive materials so vital to such reference work. Newspaper files require supervision for public use and are kept in adjoining stacks.

when placing the departments in a new plan.⁸

Each additional department increases costs. In large cities complete organization on this basis seems sensible. For a city of 400,000 to duplicate the entire departmental plan of another city of 800,000 is not necessarily a sound investment, because the number of users is too small in proportion to the total minimum trained staff required to man all the service points. Department headship salaries, totalled, are the chief



Local History and Genealogy Room of the Jones Library at Amherst, Mass. The low ceiling (9' 7"), the bookshelves extending to it, and the full-length windows contribute to the attractiveness. Furniture, equipment, and lighting carry out the spirit of the design. The residence or club character with numerous small intimate reading rooms, raises at once the question of salary cost for the supervision and servicing of such small units. Putnam & Cox, architects. 1928.

item. But chosen for their outstanding abilities, these persons provide the leadership, make contacts with the community, find new ways to give more prompt, complete, and intelligent service more economically. Combining the subjects into fewer departments would be the compromise. One or two subject departments are better than none.

Is a general reference room required in a subject-departmentalized library? Soon after opening the Los Angeles building, general reference was combined with the history department, and the arrangement seems to work out well. At Cleveland and Baltimore this would not be considered favorably. In Cleveland, with general reference on the main floor and subject departments scattered on three floors, the amount of travel and delay in using stairs and elevators is doubtless the chief reason why the general reference department continues to be busier than most subject departments. At Baltimore only a minor proportion of adults need go upstairs, for nearly all purposeful adult book use is on the main floor. But its general reference room is very busy.⁹ So is that at Rochester, similarly placed at center rear of the main floor and comprising the previously independent Reynolds (reference) library—a happy combination!

A general reference department will continue to handle a large bulk of miscellaneous, less spe-

cialized questions for old and young. Brief data are found in general encyclopedias, handbooks, and yearbooks. It is a starting point for finding further data in subject departments, and a center for advanced students needing material in several fields or doubtful as to departmental boundaries. It may supplement all subject departments by locating references through its general indexes, and other tools. Its national and trade bibliographies answer bibliographical questions on books and publications of all countries.

Departments may be established without necessarily having separate rooms.¹⁰ For example, an industrial city wishing to organize special intensive service to the technical population without splitting its bookstock or paying full-time assistants to service such a separate room 12 hours daily, may place a service desk and adequately trained assistant for a 40-hour-a-week schedule, in proximity to the technical portion of the book collection. (See view of Rochester service desk and workroom in Ch. 18.) Here, surrounded by the necessary indexes and reference works and connected with the industries of the city by telephone, the special staff knowledge and abilities which make a subject department effective are emphasized rather than the physical separation of the books and readers from the rest of the library. In fact, when the industrial librarian is off duty, other assistants can do their best, as they did before the new service point was established.

PROXIMITIES OF SUBJECT DEPARTMENTS

As suggested above, subject departments must be all-inclusive in their own fields. Older books that cannot go on open shelves should be in adjoining stacks. Next to complete bookstock a departmental catalog is highly important. Quick access to the general reference room is less im-

⁹M. N. Barton. "The general reference department," *Lib. Jour.* 64:269-70. April 1, 1939.

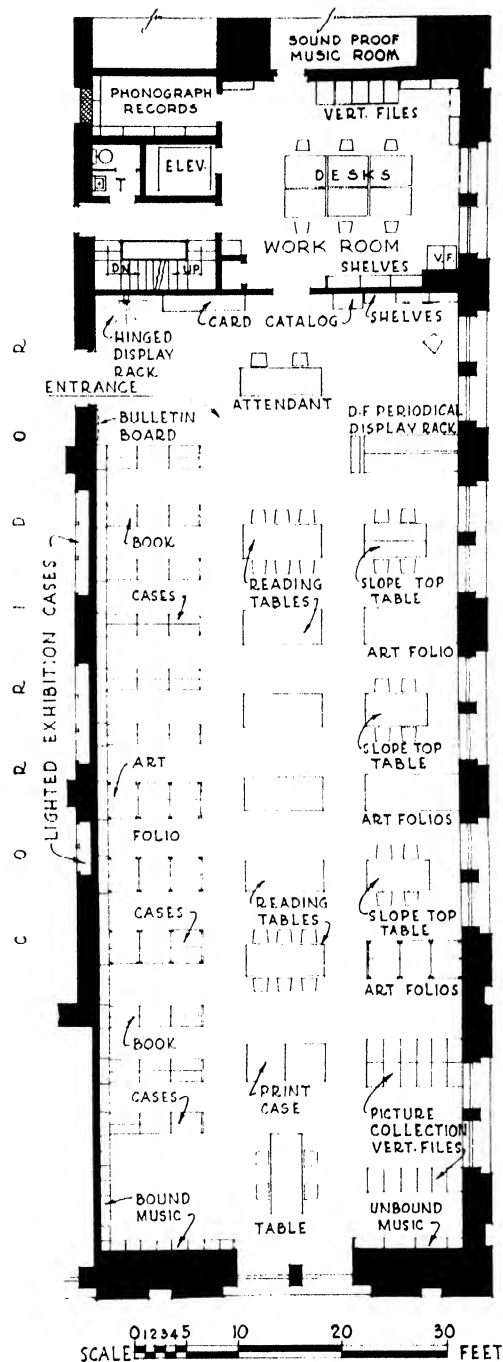
¹⁰See articles by L. T. Ibbotson, *Lib. Jour.*, 50:853-58, Oct. 15, 1925; and G. A. Countryman, *Lib. Jour.*, 50:213-14, Mar. 1, 1925. Also Peyton Hurt, "Staff specialization: a possible substitute for departmentalization," *A.L.A. Bul.* 29:417-21. July 1935.

portant in the case of certain subject departments than nearness to others in related fields. Some subject departments, however, notably those devoted to the humanities, history, and the social sciences, are very dependent on the use of the general indexes, bibliographies, encyclopedias, and other tools, and should be as near as possible to the general reference room. This point is of major importance if any departments must be taken from the main floor. It was to secure this sequence and avoid the dislocation and scattering of these departments that they were arranged (with two exceptions) contiguously around the main floor of the Baltimore and Rochester buildings. Here they also have the advantage of the final important proximity—to the public card catalog and to the circulation department's lending and return desks. If subject departments must divert their time to the details of lending and discharging books the result is most unfortunate to staff morale, unless there are clerical assistants, as at Cleveland. The duplication of paper work is enormous.

For subject-departmentalizing, therefore, a building arrangement should relate the departments to both the lending and the return desks, the public catalog, the other subject departments, and to the general reference room if there is one.

The several subject departments in a library should not be made to conform to the same uniform spaces and equipments, but size should correspond to proportionate stock of books, magazines, and vertical file material. This has been proved in the Baltimore building, where, for example, Industry and Science has so large a collection of bound periodicals that the entire stock has of necessity been located in the stacks, seven feet below, requiring many more trips than other departments make.

Any of the subject-departmentalized libraries will doubtless be glad to send inquirers a detailed list of special activities of departments, and comments on workroom facilities. (See Ch. 18 for reference and subject-department workrooms.)



An Art and Music Department, with equipment suggested. The book collection, here arranged in 9' double-faced cases, should be much larger, in proportion to seating, calling for a mezzanine stack or shelving in adjoining room. See Ch. 42 for details of equipment.



The John G. White Room, Cleveland, showing a two-level stack with balcony, containing a very large collection of rare and specialized books on folklore and related subjects. Readers have roomy tables near the high windows. Generous card index cases, display cases, cork tile floor, are a few of the carefully thought-out details. Walker & Weeks, architects. 1925.

SPECIAL EQUIPMENT FOR SUBJECT ROOMS

The following special equipment is to be considered for the typical subject department and for three departments whose needs are still more specialized. (See also Furniture, Ch. 42.)

Typical Subject Department, e.g., Technology, Business, Teachers', etc.

1. Service desk equipped for the department's reference work (see comment above under reference room equipment).
2. Special deep shelving for oversize and rare books, where needed.
3. Shelving or cases with locked screens or glass doors for valuable or stealable books—or keep in a screened portion of near-by stacks.
4. Display stands for 75 per cent, if possible, of the periodicals subscribed to in the given department.

5. Special flat shelving for the rest of the periodicals.

6. Map cases, flat or vertical filing, for maps, plans, charts, drawings, etc.

7. Departmental card catalog, 4 cards x estimated department bookstock 20 years hence.

8. Additional card cabinets, perhaps 8 trays per assistant, for special indexes, "Wait" order files, etc. Consider whether these should be in regular catalog case, or in special cases in reading room, near desk, and some, surely, in the work-room.

9. Consulting stand for periodical indexes; depending on what indexes are available, and on relative bookstock and circulation in the department.

10. Vertical file cases, perhaps one 4-drawer case per 1,000 vols. of open-shelved books.

11. Dictionary stand, or revolving rack on a table.
12. Display stands for new or special books.
13. Glass exhibit cases as space permits.
14. Bulletin boards, one in staff room, one for public announcements.
15. Display case for booklists.
16. Secluded corner, if possible, outside the public room, where readers may use a typewriter or dictate from library material.

Art Department. NOTE: The rapidly increasing public interest in art is a factor in estimating future needs and capacities.

Items 1, 2 (12" to 16" deep), 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15, as above, plus:
 17. Folio cases, open, or preferably glassed, preferably 42" deep, 48" wide, and not over 5' high, if space permits; regular height is permissible if a page is always at hand for heavy volumes; with or without roller shelves 4", 6" or 8" apart. Such cases are for large volumes laid flat, and shelving should be from 20" x 36" to 30" x 48" in same proportion as present collection, with allowance for rapid increase because of current public interest in art.¹¹

18. Additional vertical files for picture collection, if any, size and number depending on type of pictures and probable future growth.

19. Cases of large shallow drawers for prints.

20. Card catalog, plus card index files at 10 or 12 trays per assistant, on account of the analyzing of pictures, etc., which is always going on. Consider whether these should be in regular catalog case, or in special cases in reading room, near desk, and some in the workroom.

21. Special tables, perhaps 48" x 72" with top sloping two ways, for drawing and copying.

Music Department. Here again public interest is especially active, *i.e.*, increases in demand will, for some time, probably be more marked in art and music than in most other fields.

Items 1, 2, 3, 4, 5, 7, 8, 9, 10 (additional cases



The Björnson reading room at the University Library, Oslo, Norway. The low beamed ceiling, wall panelling, and window drapes give an air of intimacy to a room appropriately dedicated to one of Norway's beloved writers.

if phonograph records are to be handled), 11, 12, 13, 14, 15.

22. Card catalog, plus card index files at 10 or 12 trays per assistant, on account of the analyzing of music, etc., which is always going on. Consider whether these should be in regular catalog case, or in special cases in reading room, near desk, and in the workroom.

23. Shallow drawer boxes with tip-down fronts for sheet or thin music.

24. Shelves equipped with 1/4" vertical partitions 8" apart, for shelving bound music volumes.

25. Special shelving, like preceding, for phonograph records, if any. Consider vertical files.

26. Sound-proof music room,^{11a} if any; phonograph, piano, radio; chairs, table, rug, etc., for auditions of not over 4 or 5 persons for reproduction of music studies. Larger groups presumably in some meeting room elsewhere in the building.

Local History. Items 1, 4, 5, 7, and the following:

27. Large proportion of glass-doored shelving 12" deep, wall and floor cases.

28. Oversize shelving 18" deep for atlases, flat books, etc.

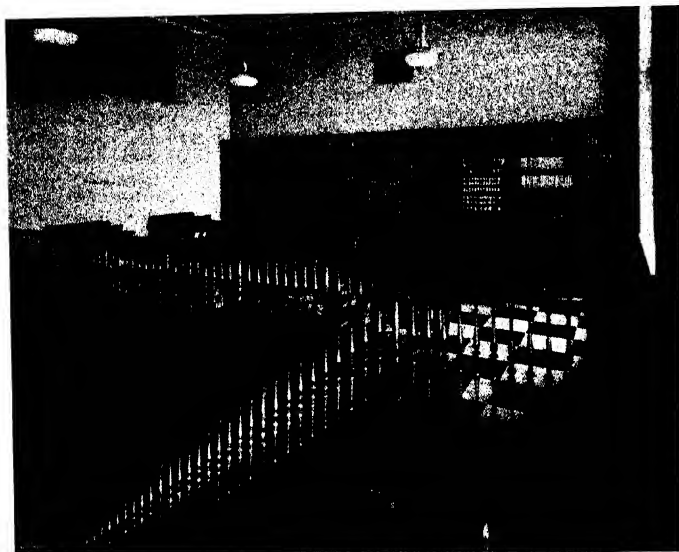
29. Portfolio drawer case for larger flat books.

30. Map cases. Flat shallow drawers, or vertically suspended or filed.

31. Vertical files. In this department the mass of clippings, leaflets and minor uncatalogued material, photographs, etc., will require more filing space than in any other department, probably

¹¹ See F. P. Keppel and R. L. Duffus, *The Arts in American Life*. N. Y., 1933, p. 84-85.

^{11a} For details of sound-proof booths in a record library, see *Architect and Engineer*, 144:31-33, Feb. 1941.



Sixteen individual study tables on the somewhat isolated balconies of the first floor general reference room at Baltimore give a degree of privacy and quiet to students for protracted research. In locked cupboards below the books, readers lay away materials overnight. These are supplemented by work tables with more space in the closed stacks.

6 to 8 four-drawer cases per assistant,¹² unless materials are to be transferred later to subject scrap books, or other likelihood of withdrawing or discarding.

32. Card cabinets. Here also an amount of indexing limited only to the number of employees or volunteers, rapidly accumulates cards. Perhaps 12 or 15 trays per assistant *in addition* to the card catalog of the classified and catalogued books, pamphlets, etc.

33. Exhibit cases, table, vertical and wall for books, prints, maps, etc.

34. Special case for housing large framed local prints (if too many to hang on walls).

35. Case for large unframed prints, posters, broadsides.

36. Safe for especially rare materials.

37. Case for photographic negatives.

38. Projector for reading microfilm.

39. Case for microfilm.

40. Sloping rack, stationary or movable, for use in reading newspaper volumes.

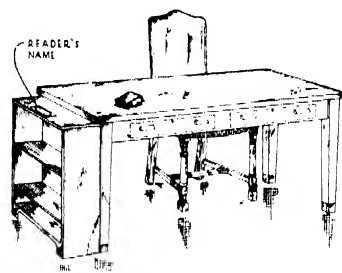
41. Plentiful staff desk and work-table space in both the public room and the workroom, more generous than in any other public department, for searching, indexing, clipping, mounting (special press for photos), filing, correspondence.

SPECIAL COLLECTIONS

Notable collections in special fields, books of beauty or rarity, or unusual completeness in their subject, or other distinction, add to the prestige and scholarly character of the institution. Smaller libraries should not obligate themselves to specially house such collections, except those of a purely local character, such as neighborhood history. Two competent articles¹³ point out the advantages and the disadvantages of such collections, and some administrative problems.

A special collection may be given its own room only when it meets these requirements: if it covers an essential major field such as architecture, the arts, history, local history, rather than some minor and inconsequential hobby or enthusiasm; if the books include many titles

Some libraries recognize the need for studies prolonged over weeks or months, and set aside tables with shelving so that materials may be assembled and held with some safety and satisfaction for the student.



which will be actually used, and not merely rest as curiosities upon the shelves; if the collection comes with an adequate fund to keep it up-to-date; *if, in short, the library can afford to give up the highly valuable space required, paid for by the community, with the added annual expense for the physical maintenance of the room, and the salary of one or more persons to service it adequately.*

Nothing is more dismal, from the viewpoint of popular education, scholarship, or public

¹²At Baltimore after four years there were 27 4-drawer V.F. cases and 155 catalog trays.

¹³M. R. Cochran, "Acquisition and care of special collections," *Lib. Jour.*, 54:246-48, Mar. 15, 1929; H. M. Lydenberg, "The special library in the public library," *Lib. Jour.*, 54:478-82, June 1, 1929.

economy, than to be invited into a locked room or into an open, supervised room with no readers, where library trustees have obligated their successors to maintain a special book-morgue. The donor might have been satisfied to have the books shelved as a bloc-collection in some other room, or in the stacks, properly marked to call attention to the gift; or even to give his books to be added to the general collection, each marked with appropriate bookplate.

There are, nevertheless, a few special rooms like those housing the John G. White collection at Cleveland and the Architectural Library at St. Louis, that are so sound and effective in purpose and provision, their collections so extensive and useful, and so beautiful and satisfying in their design, their atmosphere and their service, as to be a continual pleasure to everyone concerned.

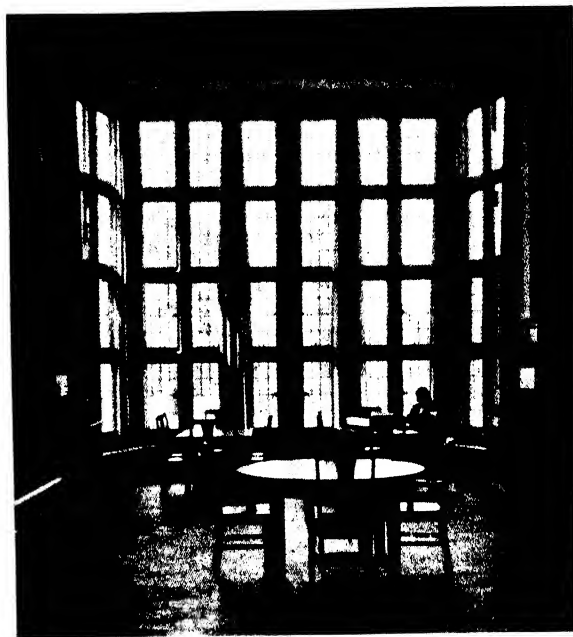
INDIVIDUAL STUDY ROOMS. CARRELLS

The large public library, and even the small one, may wish to provide for the person studying day after day, who has an array of material he wishes to spread out and leave safely overnight. This will be costly. Separate rooms must be heated, cleaned and supervised. Probably, as with the university library cubicle or carrell, the perimeter of the stack is the best place. A partitioned space 4 ft. square is adequate, with built-in desk or counter and shelving above it.¹⁴ Near-by steam mains have rendered many carrells uncomfortable. This must be guarded against.

The commission studying "Library provision in Oxford," after visiting several countries, reported in 1931 a general disappointment in the system of carrells as used in colleges. At Göttingen it was found, as elsewhere, that the scholar draws from so many collections that no one position will be near any large proportion of his books. At Harvard though the booking of carrell space is heavy it was found that on an

¹⁴See Ch. 40 for further carrell discussion.

¹⁵Commission . . . of the University. *Library provision in Oxford*, 1931. Oxford University. Par. 102, p. 61-62.



The Richard Branch, like other recent Detroit branches, has high ceilings and large bay windows, much sought by readers. Note window seats and display racks. Marcus R. Burrowes, architect. 1923.

ordinary day only a few carrells are in use and other readers cannot have access to the assigned unoccupied ones. "This seems to be wasteful of space and of the reader's time and comfort, and we conclude that the carrell and individual study would not be desirable in the Bodleian."¹⁵ These conclusions might not be agreed to by other librarians, though it must be admitted that despite a demand for carrells, they stand vacant most of the time, and in a public library ought to be shared by two or more part-time users.

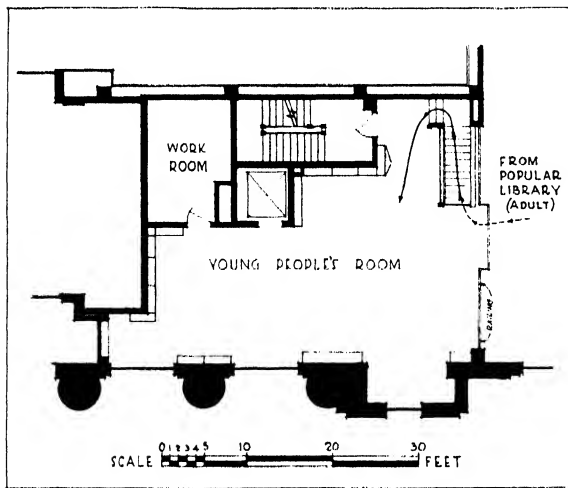
A simple substitute for carrells is a series of individual study tables with bookshelf and locked drawers or near-by lockers where the student's materials may be kept overnight. Such tables may be provided in balcony or mezzanine space or in the nearest stack area. All such spaces and tables (generally reached by passing the service desk) require rules and supervision against their abuse by occasional inconsiderate persons.

In cities of 150,000 and more, it is increasingly important to provide, either in a corner

of the stenographic room or in some isolated area, a room, carrell or screened-off space for businessmen, reporters, and students to dictate from their researches, or to typewrite for themselves.

INTERMEDIATE READING ROOMS

The special recognition and stimulation by American libraries of reading and study by boys and girls in the approximate age range of 14 to



Reading Room, for Young People, Rochester, N. Y., in mezzanine over the staff workrooms on main floor, reached by a short stair from the Popular Library (adult). A difference in purpose between this and the Highland Park Young People's Room: leisure reading vs. reference work. Therefore the location, equipment, and stock are very different. Acoustic plaster ceiling with air-conditioning outlets. Gordon and Kaelber, architects. 1936.



18¹⁶ has developed rapidly since 1920. Libraries have realized their failure to hold this highly significant group, for when they begin to feel out of place in the children's room they too often escape the influence of books and libraries altogether.¹⁷

Because librarians seek to overcome this tendency, and because modern methods of teaching compel the public library to supplement the high school library, an increasing proportion of young people now bring new problems of noise and disorder, of seating and bookstock, which sometimes make necessary their separation from the adults who resent their bustle and confusion and their occasional discourtesy. To learn, as some libraries have,¹⁸ that half the patrons of their adult departments are from 15 to 21, makes it evident that this is distinctly a problem which has recently arisen and affects the whole building plan.

Viewpoints totally differ as to how these young people should be treated. At some of the recent large central buildings, special quarters have been set apart, e.g., Cleveland's Robert Louis Stevenson room, serviced by especially chosen staff members whose personality, book knowledge, and enthusiasm are acceptable to these critical intermediates. Other librarians feel that they resent being treated as a separate group; are happiest when they mingle with the adults, without discrimination; so special space is assigned in adult reading rooms for attractive, selected books that they will use freely. These books and the understanding assistant are then encountered by old and young alike. The young folk may use or pass the adult books near by, but in a sense they are put on the adult level.

¹⁶In various libraries their room is designated High School Room, Young People's Room, Students' Room, Junior or Senior Room (Chicago), etc. No satisfactory name has been found. Publishers have unfortunately changed the implication of the perfect classic word "Juvenile." At 17 and 18 they no longer wish to be classified as "adolescents."

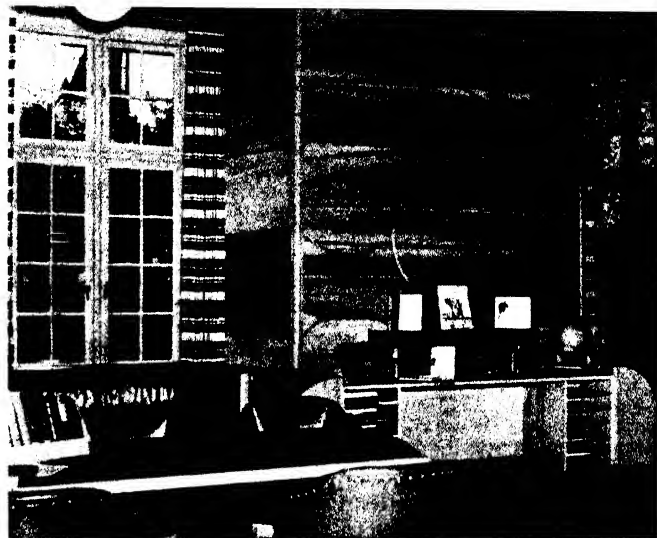
¹⁷See an important article by C. E. Rush, *A.L.A. Bul.*, 1927, v. 21:298-304.

¹⁸A.L.A. mimeographed circular to readers' advisers and young people's librarians, 3p. Aug. 22, 1938.

The foregoing comments have to do with independent recreational and leisure reading. The demand for reference material to supplement their high school course is quite a different matter. Current trends in teaching methods rule out the old-fashioned use of a single textbook. Instead, topics or projects are assigned and the young people are turned loose on their school library and the public library. Children's books of non-fiction and children's encyclopedias now seem to them childish. To use adult reference books, they besiege adult reference and reading rooms in numbers and with a volume of more or less subdued conversation. Often, especially if the school building is near and teachers stimulate supplementary reading, older readers are driven out or seek quiet corners in self-defense.

The librarian yearns for a special room where these young students can be by themselves with less restraint and without bothering adults. It is a new condition which libraries have encouraged but which they are seldom able to handle adequately. Like the creation of any other new room or department, this calls for additional trained persons to supervise and to carry on the heavy reference work. Duplication of stock means another considerable expense. Little work, for example, can be done in larger libraries without duplicate sets of encyclopedias and other "main line" reference tools, for these cannot be borrowed or moved to the intermediate room without protests from adult patrons. For examples: Redwood City; Concord; Glenville Branch, Cleveland; Parkman Branch, Detroit; Hall Branch, Chicago.

Some recent reassignments of space in several branch libraries indicate that intermediates may need even more space than children. At Mattapan Branch, Boston, there are forty-four adult seats and thirty-six children's, while the newly adapted "high school room," for intermediates, seats seventy-seven. At Faneuil Branch a former meeting room has sensibly been converted into a children's room, to release one-half of the large general room for intermediates. Similar plans are in mind at Parker Hill Branch. At

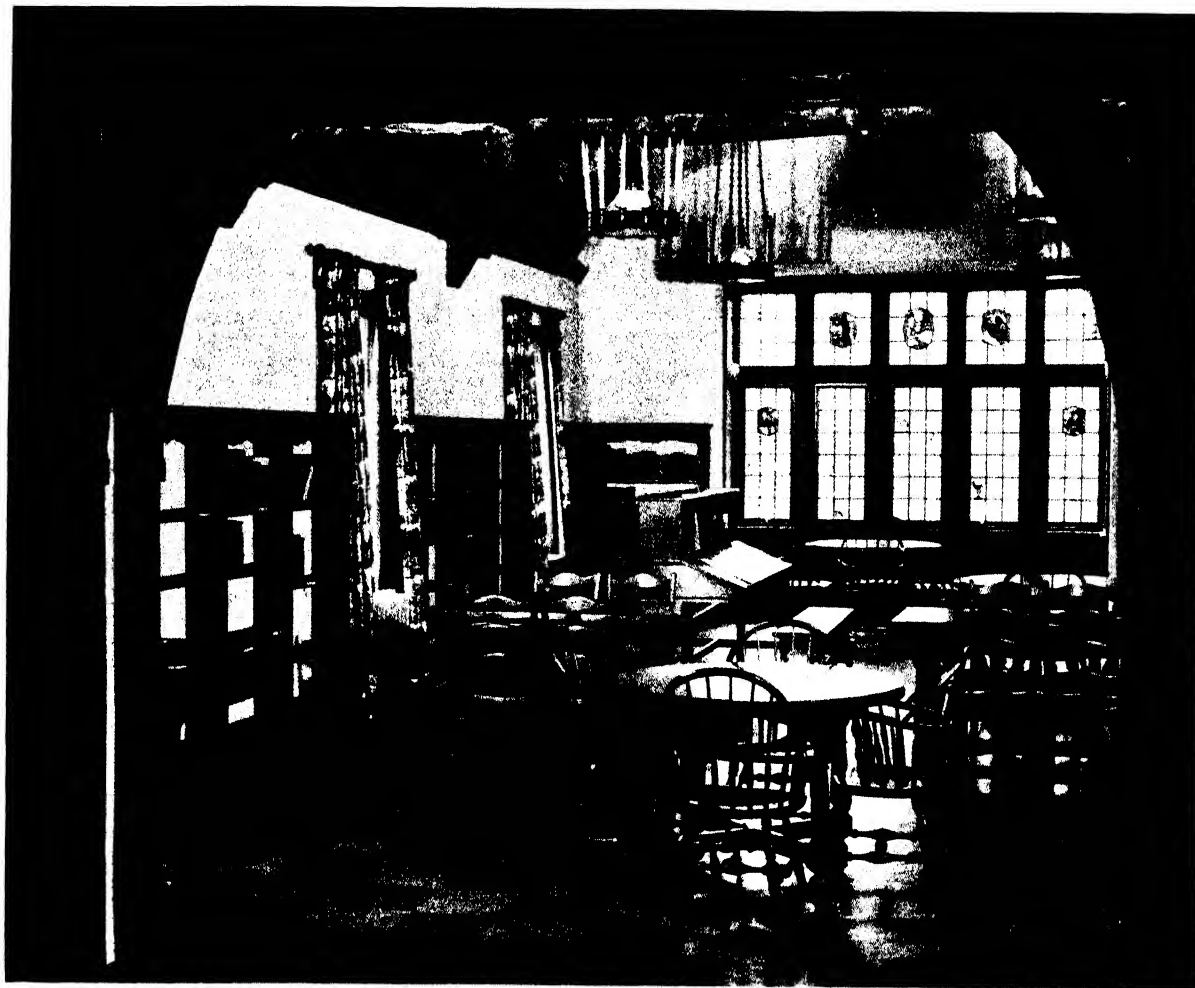


The Skinner Room, St. Paul, with its specially designed upholstered window seats and other appointments, has more than ordinary appeal for young people, 16 to 20. Magnus Jensen, architect.

Boylston Branch with 800 sq. ft. each for adult and children's rooms (circ. 95,700 and 41,500, respectively) the librarian says the high school room (266 sq. ft.) should be as large as the adult room. The same problem is being worked out in similar manner at other Boston and Philadelphia branches, utilizing space that had been provided for non-library purposes to care for this pressing new need. See also references in Ch. 16 to Georgetown Branch, at Washington, with newer types of provision for different age groups.

3—READING ROOMS

We have covered the rooms provided for reference and study, and now come to those rooms for purpose (b) of the introductory paragraph of this chapter—"to provide for those who come to sit and read for pleasure and sometimes without much other aim . . ." These are: the general reading room, browsing room, intermediate room, periodical or magazine room, newspaper room, outdoor reading room. This, like many other definitions, fails at some points, because in the case of several rooms, each serves both purposeful and recreational readers. The periodical room, for example, in some of the older buildings is also a reference room for persons who may have started to look for definite information in the general reference room, and



Reading room, Riverside, Ill. Old English theme in the hand-hewn rafters, bookcase trim, furniture pieces, metal work of electric fixtures, mullioned window with leaded glass. Square chairs with square tables and round chairs with round tables. A room of harmony and interest. Color added by the curtains. Conner & O'Connor, architects. 1931. Hedrick-Blessing photo.

find that their best material is in a current magazine. The frequency of this plight in the traditional plan has led to the modifications which characterize the modern building.

PROXIMITIES

The fact that the six various rooms following are to a large extent intended for persons who come for general, idle, leisure, or less purposeful reading, rather than for specific books dealing with any particular subject, means that if the current popular and general magazines, some of the fiction and the most popular non-fiction

are near by, the major requirements have been met. Little use of the card catalog is involved. If books have to be brought from the stack to be read in the building rather than taken home, the process becomes much like reference work and the books may be read in the reference room.

In other words, while the reference room and any subject departments must be in proximity to certain other elements the reading rooms now to be described may be located at greater distance from the stack, the catalog, the circulation and information desks. Some of them may, if necessary, be on a second floor, or in the base-

ment, unless they contain a large bloc, or all, of the adult books which are used for reference or circulation.

The leisure reading rooms will be discussed under six headings:

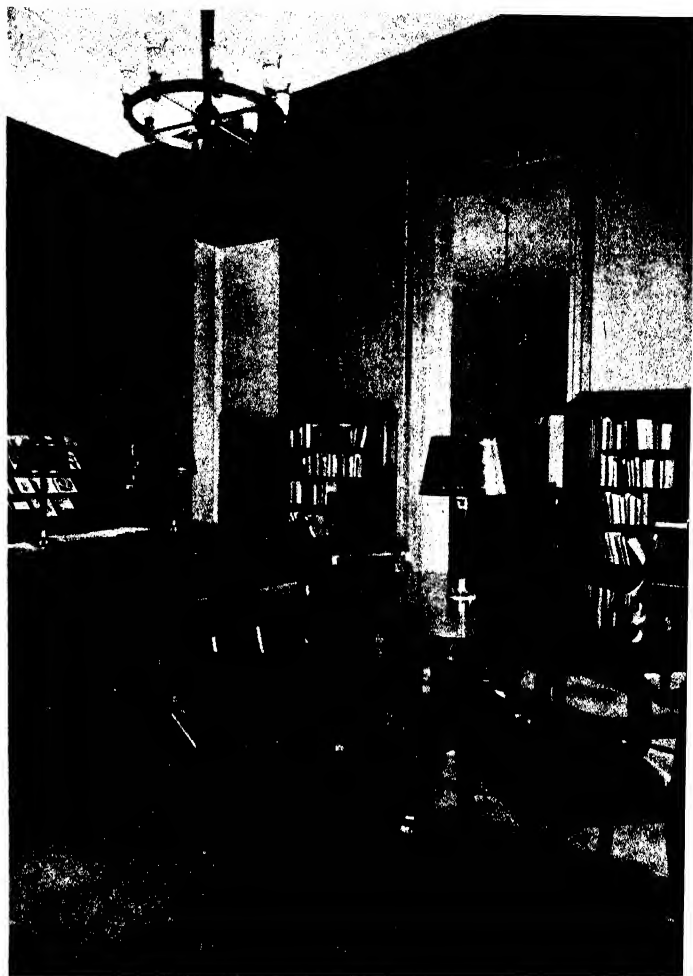
1. General Reading Room

Adult	Separated in space, if not by a partition, in all except the smallest building. See Ch. 16 for Children's Rooms.
Children's	

The term "reading room" is vague, though fundamentally it signifies a space open freely to all for leisure reading. It generally contains current periodicals, sometimes bound magazine files, and circulating non-fiction which may be borrowed, but which, in smaller libraries, may be used for reference purposes also. It often contains the circulation desk, even in libraries of fair size. It is sometimes called the open-shelf room, though this term usually refers to rooms containing books primarily for lending, with few if any reading tables, the emphasis being on the selection of books to borrow rather than on prolonged reading within the room. The increased specialization which comes with the larger library decreases the proportion of "general leisure readers," while the intensive reference room takes on primary importance. If there are circulating, reference, and periodical rooms, the so-called reading room is stripped of its main functions, and in a subject-departmentalized library the use of the subject departments includes a large proportion of leisure reading in the given fields.

Its problems of furnishing and lighting are similar to those of the reference room, while its location is discussed along with that of the reference, because the latter must take precedence.

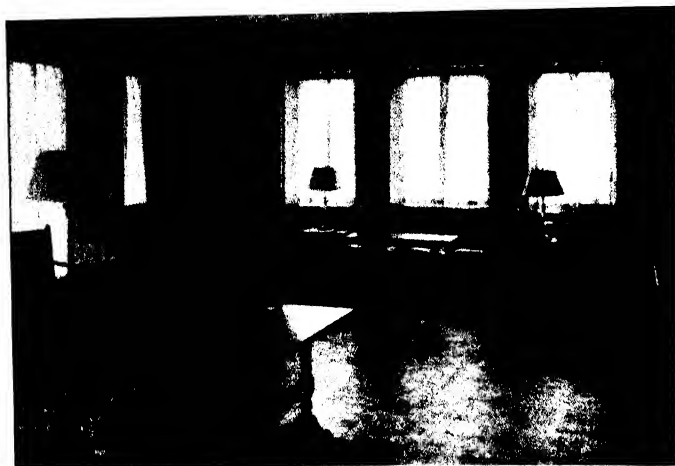
2. *Browsing Room.* An anomalous term, sometimes synonymous with open-shelf room, just discussed, sometimes used for an open-shelf fiction room, and in several libraries applied to a room housing a non-circulating collection of especially worthy or beautiful or rare books with an atmosphere of distinction and quiet, attract-



Reading room, Lake Forest, Ill. A stately room that attracts and interests by its reserved and carefully studied detail in wainscoting and furniture. As at Amherst, the club character has been chosen in preference to the public building character. Edwin H. Clark, Inc., architect. 1931.

ing a select group of adult readers who will appreciate the books and the surroundings. Such rooms, for example, as the former Standard Library at Providence (now absorbed into the open-shelf collection to meet the general clamor for space), the Book Lovers' Room at Detroit, Poe Room at Baltimore, etc. A room for this purpose will naturally be designed and furnished with more than ordinary richness, and give the impression of ease and quiet.

3. *Intermediate Reading Room.* Leisure reading is usually combined with reference work in this room especially intended for young people of high school age. Both aspects have been discussed previously in this chapter, under Special



At Detroit's Mark Twain Branch, the out-of-school adult is properly recognized by the important provision of a quiet room adjoining the adult circulation and reading room. (See plan in Ch. 28.) This haven from the disturbance of high school and college students contains only a few shelved books; its furniture is for relaxed quiet comfort. O'Dell & Rowland, associate architects. 1940.

Reference Rooms, because its chief function is to provide for the reference work arising from school requirements. There are few examples of an intermediate room for purely leisure reading. Rochester is one.

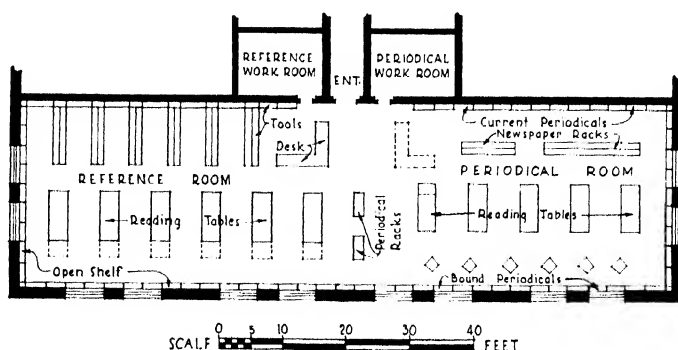
4. *Periodical or Magazine Room.* Here again the name has different meanings in different libraries. In earlier buildings it combined leisure reading with the reference use of some of the same magazines. It housed all the magazines from fiction to technology. It may contain the newspapers, also. Although readers of the type interested in current general and popular magazines seldom care for bound volumes of earlier issues, some large libraries of the older type keep the most useful of their bound files on the periodical room shelves, and carry on here their reference work with periodicals. (See item 4 under Reference Room proximities, above.)

Combination Reference and Periodical Room with common service desk. The joint use of periodicals for reference work and for leisure readers suggests eliminating the separate periodical room and bringing the periodicals into such a room where they could be convenient for reference use. See text for comment as to why this is seldom done.

It is doubtful if separate magazine or periodical rooms containing *all* magazines, or even a major portion, will be included in many future large libraries; it is against the marked tendency to utilize for reference work all except the lighter and most general periodicals, and to draw off the special subject magazines into their own subject departments.

In a large library which keeps the bulk of its current periodicals in a periodical room without duplicating them in its reference room, the periodical room must perforce become itself a reference room, with staff and services aimed at reference work. However, if the two departments can be side by side and serviced by a common desk staff, there is the advantage of providing for two types of reader in two adjoining rooms while using portions of the material, the service desks and the staff in common. All this has to do with the large library not organized into subject departments. Actually, though none of the older large libraries were divided into subject departments, we do not find a case where reference and periodical rooms are separated but operate in common. The reasons are of a practical sort. It is difficult to have two such large rooms adjoining with a service desk in common, because corridors intervene, or daylighting is not available for both rooms except in the particular combination here shown, which is seldom possible, or unless the indexes and other aids are kept in the reference room and the bound volumes sent across to it as needed.

To secure the single service desk and staff one



very long room is required, with desk at center. (See diagram.) Two types of readers will pass it, and two types of service must be given, each to a considerable degree incompatible with the other. This situation, in the large library, would be similar to that found in the smaller city library, namely, the general reference room with current and bound periodicals at hand for leisure readers. But it is justifiable in the smaller, so as to avoid the cost of staff for a second desk or room. In the larger city mere volume of work will compel the extra staff and the two types of service—reference, requiring elaborate training to serve purposeful workers; and leisure, requiring only the intelligent handing out of the magazine requested for the solving of no particular problem.

A word should be said as to the combining of periodicals with newly split-off subject departments. Industry or technology, and science, and possibly business, or all three combined, are usually the first subjects set up in special departments of their own. This because of the amount of patronage and the specialized staff knowledge required. Current and recent subject periodicals play a large part in this important service. Out of the total list of periodicals received in libraries of cities of over 100,000, more fall within this field than in any other except the general popular category, *e.g.*, *Atlantic—Time—Saturday Evening Post*. Considering the disposition of periodicals in the typical larger library, they fall easily into three groups and therefore three departments, as found in several cities, and shown in the following table and diagram:



The adult reading room at Los Angeles Eagle Rock Branch is generously lighted by the high end window and clerestory windows above the arches. Arches open into additional secluded reading space lighted by windows over the bookcases. Newton and Murray, architects. 1927.

This diagram shows three groups of periodicals as the central nucleus, each taking on related books and services, and forming into general reading room, reference room and industrial department. It might be said that reference work calls for materials in all three departments.

READING PLUS REFERENCE ROOM WITH SPLITOFF OF SUBJECT (Read down)

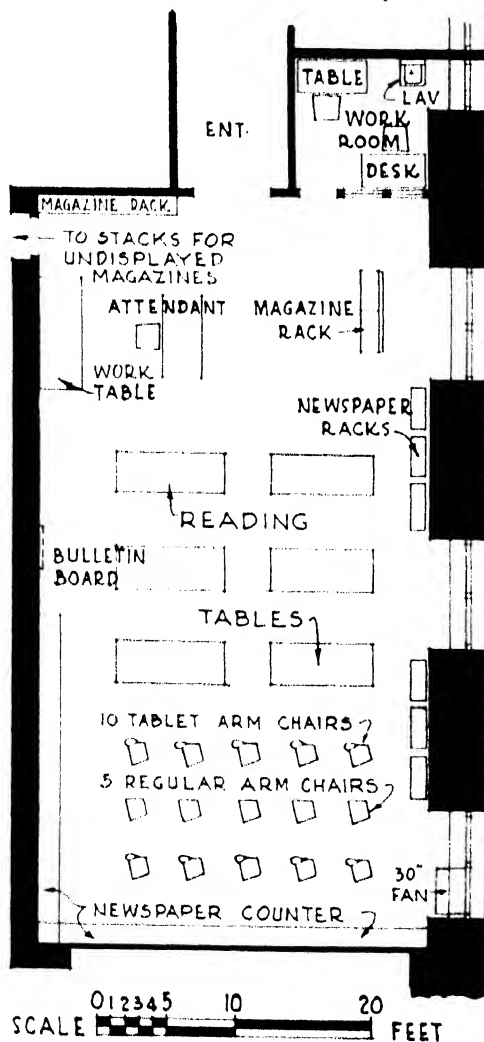
Periodicals + Books =	General, Miscellaneous, Popular	General Reference and other subjects	Industry, Science and Business
	Miscellaneous and Popular Books plus a few newspapers	General Reference Substantial non-fiction in all fields except →	Circulation and Reference Books on these subjects
Department or Room	General Reading Room	Reference Room for study and reference work	Industrial and Business Department

True, and so does circulation, if rules do not forbid. So, too, readers do not always fall into departmental categories; which illustrates the difficulty of arriving at any solution that will satisfy all.

PERIODICAL WORKROOM AND EQUIPMENT

Opening and checking the day's new magazines calls for a 36" high mail counter with card-checking file, preferably visible (*e.g.*, Kardex), and sorting or pigeonhole shelves above, to quickly route the materials for different departments.

Typical Newspaper and Picture Magazine Room, with standup counters and rod-racks for the papers and regular and tablet arm chairs for the magazine readers.

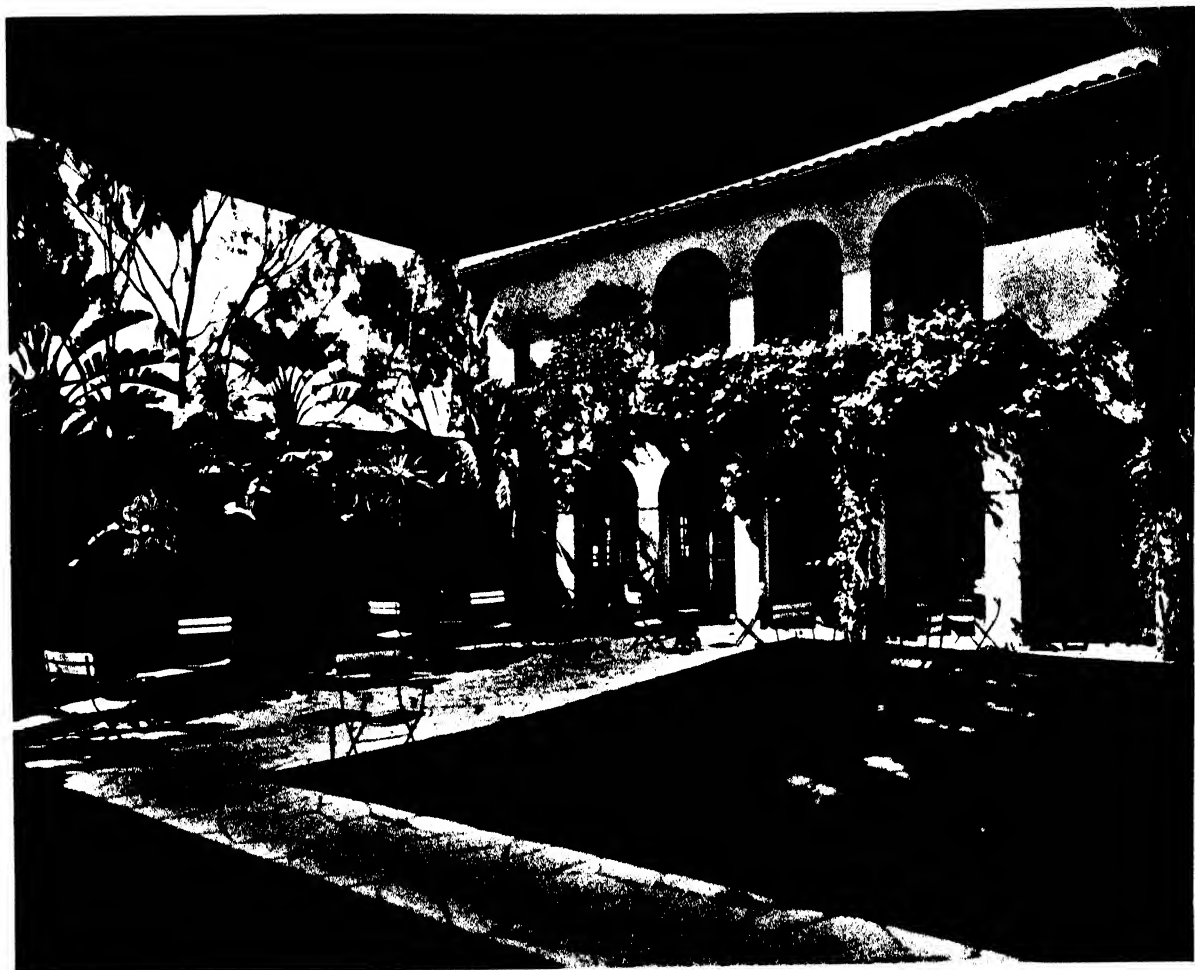


Gathering and making up volumes for binding requires plenty of table space, preferably linoleum topped and washable. Correspondence and minutiae of the periodical work—new subscriptions (because publishers simply do not wait until the beginning of a new library year to start new periodicals), writing for missing issues, title-pages and indexes, etc., necessitate a plain desk and typewriting desk. All these require considerable space, well lighted, with 12-15" wide working shelving for periodicals in process or ready to go to the bindery. They imply a good workroom, opening behind the public service desk in the periodical room. If there is no periodical room this work may be handled in the order room, or possibly in the reference workroom.

5. *Newspaper Room.* This is provided only in larger libraries and is intended to attract idle transients away from the more important rooms in the building into quarters generally located in the basement, where the "aroma of the unwashed" will be somewhat isolated. The room may, however, serve a small proportion of more substantial readers on current events with a few important papers of national circulation. To accommodate idlers means a drain upon space and facilities, which librarians increasingly begrudge. A special room reached by basement entrance or elevator, without passing near other reading and study rooms, utilizes less valuable space and is a solution where one must have readers of this type. As an English librarian says (and the English news room is almost a blight, but is being increasingly opposed): "Another economy—abolish the newsroom. Nothing does more harm to the library and its reputation as a cultural institution than this incubus. It will always attract that class of reader who has nothing else to do—in fact, the loafer. Provide newspapers at social centres but keep them away from the libraries."¹⁹

If operated at all, a newspaper room may carry pictorial and story magazines and news

¹⁹F. M. Lythgoe, "No man's child: the adolescent library," *Lib. World*, 60:133, Jan., 1938.



Santa Barbara Free Public Library. Reading Court with awning over it. Francis W. Wilson, architect. Henry Hornbostel, consulting architect. 1917.

weeklies which will appeal to this class of readers, and divert them from the other reading rooms. This will dictate whether the walls are to be equipped with anything more than the high, sloping stand-up desks to which strips or rods are attached to hold newspapers in place for those sufficiently energetic to consult them thus. Special ventilation will be needed for this room, possibly by a large local exhaust fan, and, in cold weather, an additional amount of heat to offset the exhaust. Hence the room should be on a separate ventilating and heating circuit, preferably with automatic regulation.

6. *Outdoor and Roof Reading Rooms.* An area, generally enclosed, and reached only after

passing through the building to insure supervision. Used in fair weather by those who will enjoy the privilege. A provision which has grown up in the last decade and still unproved as to the return from the investment. Outdoor reading spaces not entered through the library and not involving any walls, building cost or supervision by the staff, are described in *Library Journal*, September 15, 1936. They include the open-air reading provision at Bryant Park at the rear of the central New York Public Library, and the Hyannis Library on Cape Cod. Such cases do not affect the library building problem.

Outdoor reading rooms controlled through the building are a feature much favored in the



Smoking room, Wyomissing, Pa., paneled in pine, venetian blinds, a writing table, some chairs upholstered. Suited only to a well-mannered community that will not abuse a room whose only supervision is inspection of readers as they pass the loan desk. Muhlenberg Bros., architects. 1931.

Southwest and Pacific states, where library sites are generally roomier than those eastern libraries enjoy. Less known is the beautiful interior court of the Boston Public Library where in summer readers may take their books.

EXAMPLES

Montclair, N. J., has tried several types of provision for outdoor reading, but now the library books which borrowers may read in comfortable chairs in an enclosed court are issued within the building. At Santa Barbara and at many Los Angeles branches²⁰ there are popular outdoor reading rooms or loggias.

At Lake Forest, Ill., and at Pasadena Central the large space in front of the building is utilized for walled reading gardens, most attractive and popular. In both cases readers enter these enclosures only through the library building, so that proper supervision can be given. At the Latzer Library at Highland Park, Ill., the reading terrace at the rear is reached through the reference alcove behind the service desk. Readers are observable from the staff workroom.

Whether outdoor reading rooms bring more goodwill and satisfaction than criticism, in view of the expense of supervising and safeguarding them from thefts and weather, is a matter of

opinion. Two leading librarians of southern California, who have them, say "Never except in hottest weather are the patios much used by readers, but they are practical for story hours, reading clubs and parties." "My candid opinion is . . . not much used for reading or study. The glare is too strong. A convenient place to wait or pass time."

Such open-air space will be provided with heavily enamelled weather-proof metal porch chairs, tables and tilt-top lawn umbrellas, combined or not with circular tables.

At Evanston, Ill., there is a popular "deck" reading room on the roof, while at Philadelphia the roof reading room is an elaborate affair, reached by elevator, heavily used, and like any enclosed reading room, informally equipped. Because it tops the building and has large windows it is well day-lighted, is supplemented by a large open deck adjoining, and is a most delightful feature. Smoking is permitted in the open but not in the enclosed room, an interesting evidence of the reluctance, in all libraries, to create a separate smoking room because of the expense in supervising it, or of handling anything but leisure reading in it.

4—CAPACITIES, DIMENSIONS, READER SPACING, LIGHT

READING ROOM LIGHT VS. WIDTH AND HEIGHT

It seems self-evident that when possible a reading room should be comfortably lighted throughout by natural daylight. It usually has windows on one side, "unilateral lighting," and its width should not be much over twice its height, so the light may reach the inner side. With windows on both sides, "bilateral lighting," the width may be greater—not doubled, for the tables in the center would be dark. There are definite rules in the different states for the lighting of school classrooms, requiring window-

²⁰Los Angeles Public Library, *Handbook of the Branch Libraries*. Los Angeles, 1928. See also several cases in the plan chapters, 23 to 26.

area to be 20 per cent or even 25 per cent of the floor area, and the slope of light from the window head to the farthest side of the floor to be at least one vertical to two horizontal, or even thirty degrees; requiring also that seats shall not face a window; that there shall be so many cubic feet of space per seat, and so on. There are no such regulations for libraries, but the classroom rules are a general indication of a proper standard.

Ceiling light, or skylights, have not been successful here for reading-room lighting, though used extensively in Europe.

The whole principle of natural lighting has been attacked on the ground that artificial lighting is quite sufficient and perhaps better, since its intensity can be accurately controlled, and windows are a nuisance. This belongs, however, to the happy future of cheap electricity and large-scale air-conditioning. Meanwhile daylight must serve through daylight hours.

Therefore the normal reading room, with windows along one side, must be sufficiently high to let daylight down at a comfortable slope to the farthest table, or artificial lighting must be used in the remote portion except on brightest days. This may not be a serious objection.

Baltimore and Rochester have not found it so. A visit to these buildings shows that the readers do not cluster near the windows but scatter fairly evenly throughout the room. The old prejudice against a mixture of daylight and electric light seems unsubstantiated.

Further details concerning lighting, its limitations and theories concerning it are given in Ch. 38. The building site, its orientation and its surroundings are important factors.

HEIGHT

A high ceiling gives additional space to help absorb noise waves. The chapter on lighting discusses ceiling heights as it affects artificial lighting. High rooms add considerably to building and operating cost (e.g., heating), but it is

²¹"Size and location of the periodical room," *Lib. Jour.*, 51:954-57, Dec. 15, 1936.

generally considered that no large public reading room should be less than 14 ft. high to be really satisfactory to the public. Daylighting should be utilized to the fullest extent, with windows running close to the ceiling, with provision that any curtains, shades or Venetian blinds be mounted high, and regulated to permit the maximum of daylight. If at certain hours the blinds must be dropped or tilted to avoid glare, schedules and instructions should provide for this cutting of daylight during the fewest possible hours, and then restoring it.

AREAS

Gable²¹ gives sizes of library periodical rooms, but these are based on rather meager returns, and the distinction and relationship between periodical and other reading rooms in applying the figures to a public library building being planned are so confusing that these tables are not given here.

It may be ventured that in the small and middle-size public library building, 55 to 60 per cent of the main floor area can be devoted to reading rooms of various types (see Ch. 11).

Long reference and reading rooms are preferable to square ones. Architectural proportions are better, and whether daylighting comes from one or both sides, it is best that it should reach all the tables, a result difficult to obtain in a very wide room. The diagram just offered shows that with a 14 ft. ceiling, 25 ft. is the horizontal limit of ideal natural lighting from windows on one side. Six- or nine-foot double bookcases could be placed at right angles to the rear wall, thus increasing the room width to 35 or 40 ft., with electric lighting between the cases. With the same ceiling and window heights, and windows on both sides, the room could be as wide as 45 ft. if the light is not shadowed by surrounding walls. Reading rooms of the vast dimensions of Boston's Bates Hall, shown in the diagram, are rare; the smaller library finds a ceiling height of 14 ft. to be all that is desirable. Some rooms are, according to Fletcher, in referring to university reading rooms for several hundred students, too

"immense and unmanageable. . . . Study rooms in which nobody is able to study. Let us not build any more of them."²² On the other hand, with a given total area, the fewer the rooms, the lower the cost of supervision.

PLACING OF READING TABLES

Usually it is assumed that a reader should not face the light or sit with his back to the light, casting his shadow on the book he is reading. Therefore, it is customary to set the table end toward the line of windows. Baltimore breaks this rule in certain rooms with end light, for the ceiling is high, artificial light almost constantly in use and buildings across the street prevent dazzling horizontal light.

The ordinary table has seats on each side, none at the ends; it is 36" across, and a space of 30" is allowed each reader. Tables are spaced 60" apart to allow space for the two lines of seats and passageway between, and from 40" to 60" end to end for aisle space.

The space between table ends and shelves

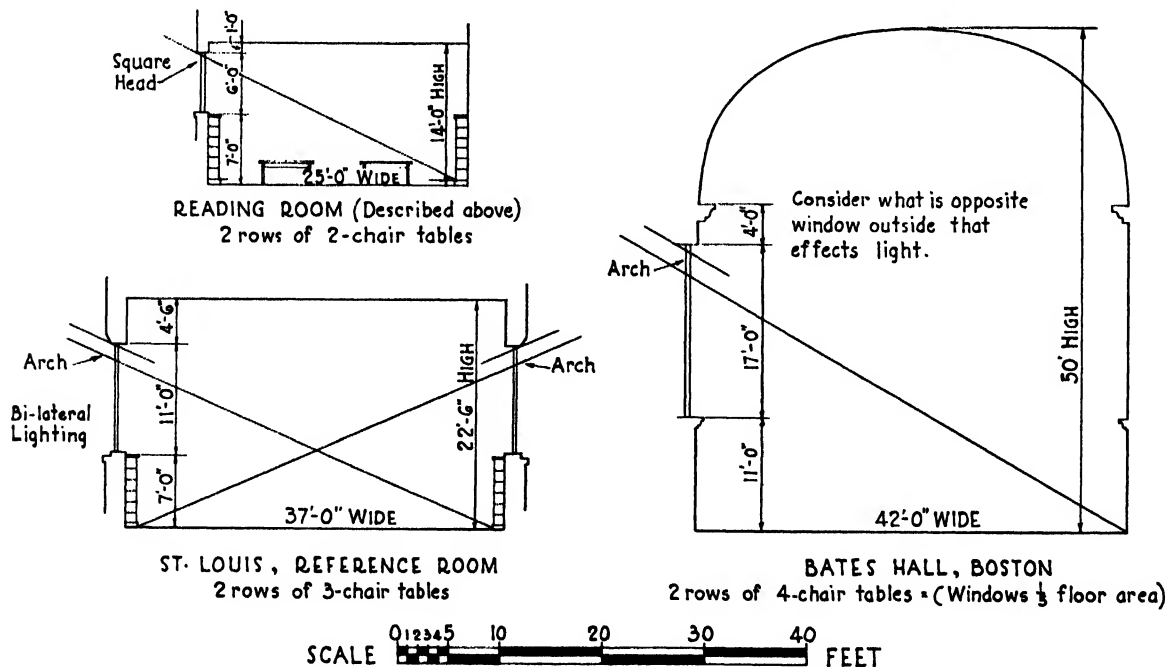
should be 48" or more, with no chairs or projections in the aisle, depending on the distance from the entrance to the farthest table and the number of persons using the tables and shelves. Aisles must accommodate (a) readers entering and leaving the room and those moving about between the tables; and (b) readers examining volumes on wall shelves, and those passing by them to examine other books; that is, if it is a long, large reading room with 75 to 100 readers or more, a 4' major aisle is a minimum; if 200 readers, 5'; or if a row of bookshelves faces it, a foot more in each case.

Another space factor is the necessary "overhead" departmental equipment—index tables, service desk, atlas case, dictionary stand, and other pieces of furniture, near the working entrance to the room.

Tables for four readers are usually preferred, but the longer the tables the fewer the aisles, and therefore the greater number of seats in the

²²"The undergraduate college student and the library," *School and Society*, 45:735-40, May 29, 1937.

Various reading rooms showing angles of lighting. To give good light throughout, the window height, measured from the floor, should be at least half the room width. Window glass area should be about 20% of floor area.



room. But against this must be placed the interests of the individual reader who much prefers to have fewer neighbors, and can get to and from his chair with less confusion.

This spacing has been so carefully studied that it is always wise to plot out the seating in the preliminary plans of a building, tracing out the lines of travel to be sure the width of the room is economical. For a rough estimating figure, 25 sq. ft. per reader, measured between the faces of the bookcases, is approximately correct. With long tables and minimum spacing this can be reduced somewhat; with generous spacing and allowance for files, indexes and a staff member's desk, 30 sq. ft. is none too large.

AN EXAMPLE OF TABLE ARRANGEMENT

A typical application of the rules is shown in the literature department at the Baltimore library. The room is without walls, but one side is formed by a continuous bookcase 7' high, the other by a series of 9', double-faced bookcases projecting at right angles into the room, forming an equal number of alcoves. The total dimensions are 36' x 74'. The 9' bookcase strip, and the wall cases on both sides, are omitted for reader calculation, reducing the free width to 25'. The departmental workroom, a glass-screened enclosure, occupies 10' x 16' near the entrance (plus some desk space recessed into the wall).

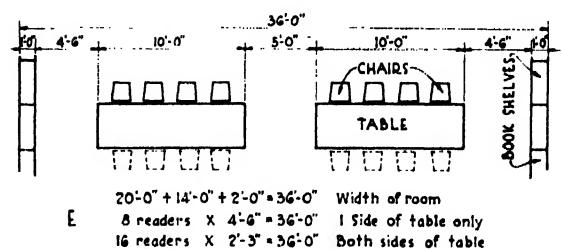
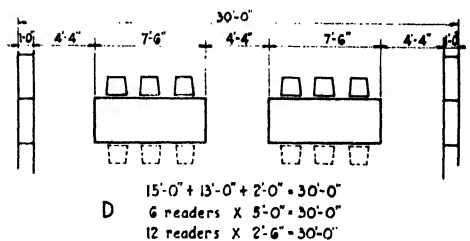
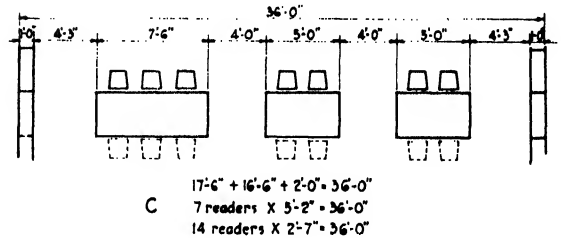
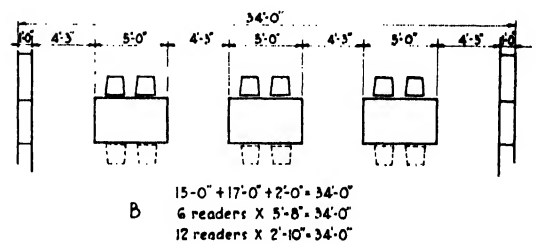
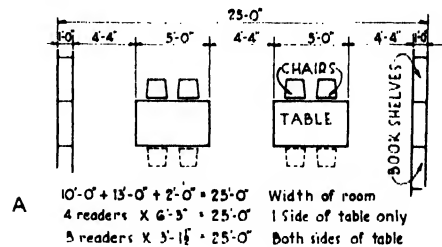
Reader spacing, arranged by decreasing amount of "elbow space" per reader in rooms of different widths, from 25' to 36'.

How do reading room widths influence the placing of tables of standard lengths? Assuming 1 long, 2 medium, or 1 medium and 1 short, or 3 short tables, as the usual possibilities, the table for five or six chairs on a side is challenged at once for its objectionable inconvenience to patrons in getting to and from it through the long double row of surrounding readers. Better where readers stay seated for considerable periods and do not go about the room looking for material.

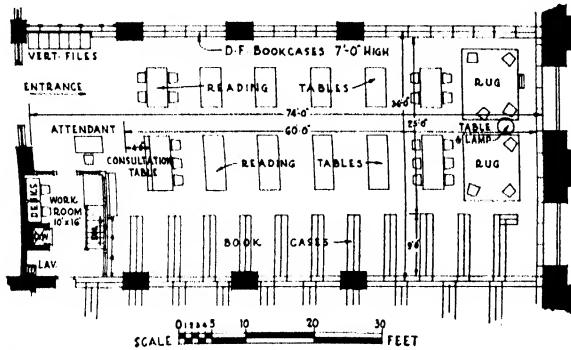
Single-reader tables, highly desirable, consume added space; a few in each room are a boon for prolonged research. Tables seating readers in pairs, on one side (2 per 5 ft. table) or opposite (4 per 5 ft. table), are perhaps as generous as the ordinary building can allow, while 7' 6" tables seating six are still more common.

Chairs should not be placed at table ends.

Should this be included? Certainly not in the net area for reader use, which is reduced from $25' \times 74' = 1850'$ by 160 sq. ft. for the workroom, leaving 1690 sq. ft. for the readers, with sufficient room for comfort and convenience,



but with no space wasted. At 30 sq. ft. each this would accommodate 56 readers. See caption:



Actual reader space begins 4' in front of the first tables; 25' x 60' = 1500'. 7 tables, 5' 6" long; 7 tables, 7' 6" long, 4 and 6 chairs each, except last pair of tables replaced by 8 upholstered chairs. 65 actual seats, at approximately 26 sq. ft. each—a safe "net."

In very large rooms with their larger flow of people coming and going, wider aisles and more space between tables would be required, especially if long tables are used, *i.e.*, 12' or 15' long; such long tables are not in much favor. The

general rule of 30 sq. ft. per reader is safe, therefore, for practically net space for readers, chairs, tables, aisles, floor stands, and service desk. A separate and adequate workroom, so essential as an annex to a busy larger reading or reference room, should be figured as added space. Part of it should, if possible, be located within the walls of the reading room, as explained in the chapter on workrooms.

All of this is affected by the type of readers. It would be more appropriate to crowd readers in a magazine reading room than in a specialized reference room; the library could not be expected to make as much provision for idle readers as for students, and the materials used require less space. Seated children require still less space, but 20 sq. ft. per reader seated in a crowded room is the very minimum. Actually, children's rooms provide a far larger proportion of open floor space because these young folks are constantly moving about, and few of them sit down at tables.

Children's Room, Brooklyn Public Library. Parent-teachers' Room in mezzanine, entrance and reversed desk below. Pale blue walls, gray rubber tile floor, acoustic plaster ceiling with projected light through flush lenses. Alfred Morton Githens and Francis Keally, architects. 1940. Photo by S. H. Gottscho.



CHAPTER 15: THE BOOKSTOCK: ITS LOCATION AND ACCESS TO IT¹

AS SOON as one enters a library it is more than appropriate to see an attractive, generous stock of books well arranged on shelves within easy reach of readers. In the large building with its entrance lobbies and halls this deserves special study by the architect.

"Increased accessibility to books is the most significant characteristic of modern library planning." American libraries have almost universally adopted "open access" to bookshelves, "of all the recent liberalizing tendencies in library administration, one of the most important."² Recently English librarians have been accepting this feature introduced by J. B. Brown at Clerkenwell in 1894. It is still considered impractical in the "reference" departments of the larger English libraries, but in some of the smaller new libraries (*e.g.*, Sea Mills Branch at Bristol, and the remodelled lending department at Leicester) everything is open, without barriers.

PROS AND CONS OF OPEN SHELVING

English respect for the law may make the problem of book thefts less serious there than here, but in America the appalling increase in book loss may bring a return of the old barriers and restrictions planned to insure effective scrutiny of the patrons and what they are carrying away. Despite this there is little sign of abatement in the public and official conviction that the fewer restrictions the better.

The architect is likely to wonder at the librarian's covetousness for every possible inch in which to place books, the urge to get one more section of shelving or even a single shelf into a wall or pier that might otherwise be left exposed to indicate strength or support in the composi-

tion. Wall cases should be used to the full before planning any double-faced free-standing cases, and those used to the full before placing books in the stack. (See Ch. 13 for the effect of open-shelf room on circulation.) When the shelving is inadequate, it is best to weed out thoroughly the old and little-used books. Some one pays the "rental" bill to keep conveniently close the little-used old books, which disrespectful readers call "junk." Such space should be given to live books only. Books may be analyzed, according to their usefulness, into several categories, and each of these should be given no more valuable space than it deserves. The most useful stock goes on open shelves in reading rooms; the least valuable, or the least frequently called for, on closed inexpensive stacks in the basement or other out-of-the-way rooms, though in smaller libraries not too remote from the service desk. President Eliot of Harvard was much concerned over the decreasing value of old books and their housing cost, and years ago advocated removing great blocks of them to a distance. They have been stored in branch basements, and recently with success in a remodelled church at Providence (*Lib. Jour.*, July, 1929), since housing cost-per-volume may be a dollar in the central building *versus* ten cents at the new storage space a mile distant. Newark has arranged for large-scale loft storage.

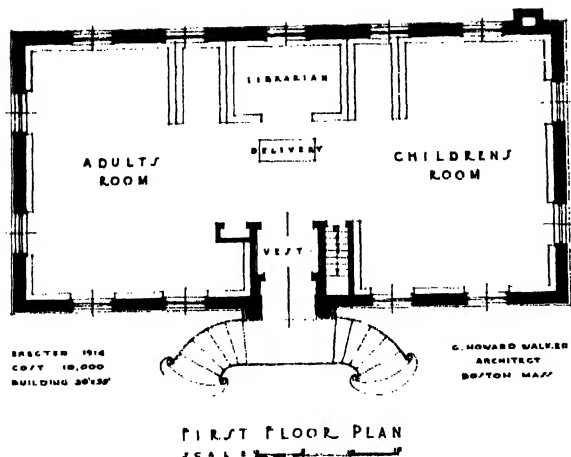
It is the intermediate category which requires study; few libraries have sufficient space around the walls for their active book collection. What shall be done? First install floor-cases; then a stack. Both must be close to readers.

FLOOR CASES

Three typical small buildings are shown here, arranged by increasing size. Sharon, Mass., shows four double-faced bookcases projecting from the rear wall, the two center ones extended

¹See Chs. 40 and 41 for Capacity, Construction and Details of Shelving and Stacks.

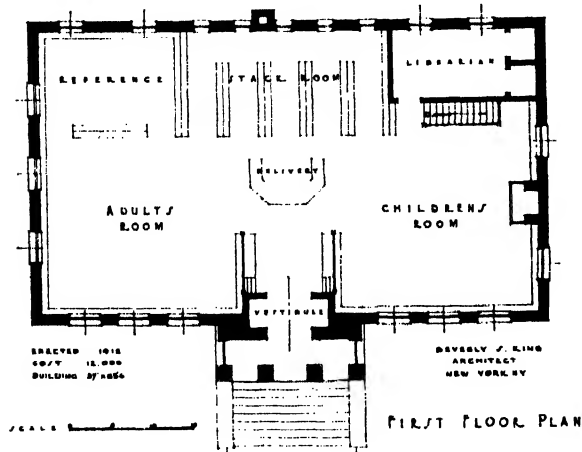
²*Times Literary Supplement*, June 13, 1935, summarizes the divergence in English practice.



First floor plan, Sharon, Mass. Building 30' x 59'; cost \$10,000. C. Howard Walker, architect. 1914.

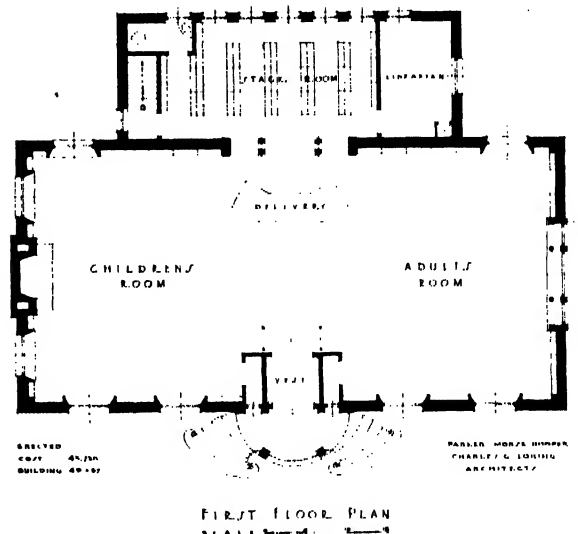
to form the librarian's work enclosure. Saugerties, N. Y., has seven double-faced cases, one of these at right angles, enclosing adult reference space. The cases are well supervised from the desk and are spaced to allow convenient access by readers. The third, Camden, Me., solves the problem more efficiently, for the rear extension has a lower roof, so is less expensive, and the large rectangular public room is freed from projecting bookcases. Beginning with Sharon, supervision increases decidedly. Camden readers enter a space restricted enough to insure safety for the books. Supervision is of little effect more than 12 or 15 ft. away. See Ch. 24 for variations

First floor plan, Saugerties, N. Y. Building 37' x 62' 6"; cost \$12,000. Beverly S. King, architect. 1916.



of these three types of arrangement, the pros and cons of each, and the competition with workroom for the space behind the desk.

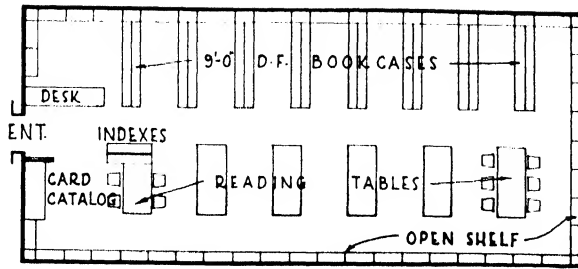
Locating free standing double-faced bookcases is a problem of appearance plus administration. Alcoves, librarians learned years ago, are wasteful of space and inefficient to administer. Surrounded on three sides with books which anyone may approach and examine, the would-be-quiet reader is disturbed and sometimes provoked by conversation and disorder. The modern method is to place double-faced bookcases close enough to give only sufficient space for



First floor plan, Camden, Me. Building 49' x 67'; cost \$45,730. Parker Morse Hooper and Charles G. Loring, architects.

readers to stand and examine the books and pass by each other; the distance apart (5 to 6 ft. center to center) is determined by the probable crowd in the room in question.

A combination reading and book shelving room is well arranged with a series of double-faced bookcases extending out from the side of the room, opposite the windows perhaps 3', 6' or 9', the tables standing in the clear space between the cases and the windows. In a reading room of ordinary proportions enough of these can be installed to give generous storage of "live" books in proportion to the number of



A good stack beginning is the series of double-faced floor cases at right angles to the rear wall, 17" deep, 5' to 6' o.c., depending on popularity of the books and tables near the windows; the service desk placed as discussed in Ch. 14.

readers. Such bookcases, carefully designed and with woodwork of distinctive grain, need not disfigure the room.³

CAPACITIES OF OPEN SHELVING

"Open Shelving" denotes the wall-shelving or free standing cases to which readers have free or open access, as distinguished from the shelving in a bookstack or stack which is either "closed" to readers or open to them by special permission.

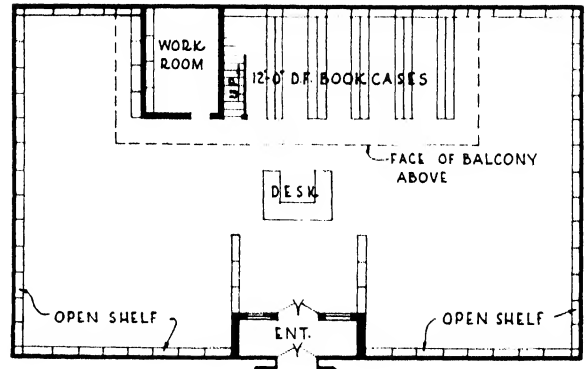
In open shelving the books are placed close together, leaving no empty spaces. As books are withdrawn, the others are pushed together to fill up the gap. This is not completely possible, but the process is approximated. The collection is constantly being adjusted, books constantly taken out and returned, so an irregular proportion of them are not in the library. The librarian attempts to keep the shelves fairly well filled. For average reading-room conditions calculate 7 volumes per foot. But there will be books out on loan, so in computing capacity for a busy small library or branch with an annual circula-

³Radial bookcases, very popular in England but now losing ground, have never been much favored in the U. S., though in the 1890-1905 period several smaller buildings and branches (e.g., Pittsburgh) used them. Springfield, Mass., 1912, is the first, last and only large city central building which has one, though Hild Branch, Chicago, installed one. The long radial stacks lose less space than the short ones, the outer ends permitting short extra cases. The impossibility of radial stacks on more than one level without excessive building cost and waste of space, and their inflexibility and awkwardness, have practically cancelled their use.

tion of 5 or 6 times the bookstock, it may be safe to assume 10 books to the running foot.

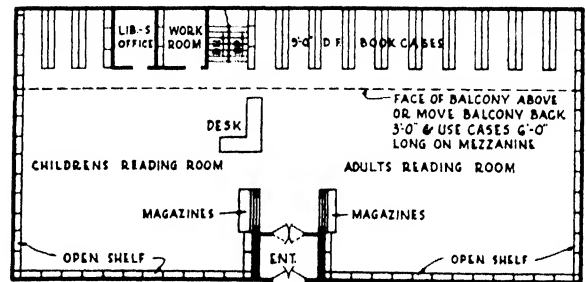
In seven New York City branches depression budget cuts brought the 1936 stocks below their 1931 size at five branches (table, next page).

With such a turnover, of 10 or 11 per volume per year, a considerable part of the stock is out of the building. "In children's rooms some one third to one half of the bookstock may be ex-



Larger double-level stack with balcony around and workroom incorporated on first level, stair adjoining. This could, of course, extend one or two additional levels into the basement. With eight 12 ft. double cases on each level, the capacity mounts rapidly and the whole plan is compact.

Larger building with rear stack extending to corner on adult side; proximity to books is more important for adults. Access to mezzanine may be along balcony as in Diagram 5, or against the rear wall, somewhat influenced by ceiling height and danger of cutting off rear light. Felipe de Neve Branch, Los Angeles, places the row of stacks across the front, under scrutiny of the staff, the narrow windows between the cases forming an interesting element in the façade design. The work-room shown is too small, and either the librarian's office should be combined with it, or it should be considerably enlarged.



	ADDITIONS	WITHDRAWALS	BOOKSTOCK JAN. 1, 1931	BOOKSTOCK DEC. 31, 1931	CIRCULATION
1931.....	40,763	41,563	225,578	234,688	2,727,037
			JAN. 1, 1936	DEC. 31, 1936	
1936.....	25,042	30,945	221,598	216,605	2,376,596

pected to be normally in circulation and one quarter of the adult bookstock. I doubt if summer conditions would make a difference of more than ten per cent." (F. F. Hopper, Chief of Circulation Dept.) An annual count in Feb., 1938, showed approximately 41 per cent of the bookstock was not on the shelves, and the space occupied was 7.5 books per running foot for the books that were in, implying that if all the stock were on the shelves it would have required 40 per cent more shelving, or approximately 10 volumes of total bookstock per foot, provided the heavy turnover continues through the summers.

In such an active library a single-faced compartment of shelving, of standard three-foot

Mezzanine space over first-floor bookcases or stacks should unquestionably be more frequently used as an effective method for increasing space close to the public and to the circulation and other service desks. It doubles the book capacity or makes an ideal workroom location. Such mezzanines and railings may be designed with distinction. Harrison, N. J., Joseph W. Baker, architect. 1938. Courtesy Art Metal Construction Company.



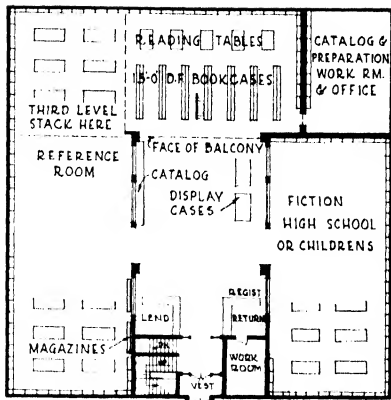
width by seven shelves high, may be sufficient for $3 \times 7 \times 10 = 210$, or about 200 books; a double-faced or free standing compartment, about 400 books. If the library or branch is larger or less active with an annual turnover smaller than 5 times the bookstock, this allowance should be reduced to the usual standard of 7 books per foot.

In a stack, however, the allowance is quite different. There is a much smaller proportionate withdrawal. There are frequent empty spaces on the shelves, so as the collection grows new books can be put in their proper sequence without much rearrangement of the older books. When a book is taken out for a reader its place is left vacant. Stack capacities are given in Ch. 40. The "Working Capacity" is about 6 books per running foot, 7 is a maximum safe formula, and when this is reached the time has arrived to consider enlargement.

BEGINNING OF THE STACK

When the floor cases, or a row of them, no longer suffice it is time to separate the bulk of the books from the readers' space and put bookcases even more closely together in stacks farther away from the readers.

Before that point has been reached with non-fiction, it probably has been reached with fiction, for novel reading within the building is slight, fiction comprises a large part of the book collection, and as it gets out of date soon it competes with good non-fiction for the open-shelf space. Stack space now becomes essential for housing the following, assuming that in each group some material will be discarded frequently:



A square plan with rear open steel stack of seven 15 ft. length cases, from 3 to 5 or 6 levels high, accommodates 10,500 volumes per level, supplemented by shelving around outside walls, though most interior walls

would be of low glass or other changeable screens. The dotted line shows limit of stack structure, including reading space next to rear windows. Lengthening cases to 18 ft. would give 13,000 vols. per level, the tables parallel to windows. The reference room could extend, with lower ceiling, to rear wall. Any square plan as large as this generally calls for central sky lighting, whose problems of up-keep have been reduced in recent years.

- (a) Out-of-date fiction.
- (b) Older less-used non-fiction.
- (c) Older unbound periodical files for reference.
- (d) Older bound periodical files.
- (e) Documents, e.g., Smithsonian; Farmers' Bulletins; Foreign Trade, etc., too useful to discard.
- (f) Gift books and magazines "in process" until time permits putting them *in* or *out* and getting them properly arranged and recorded. In many popular libraries the bulk of this is very large.
- (g) Odds and ends, a variety and quantity which demand space.

STACK ROOMS AND LEVELS IN SMALL BUILDINGS

Using the Camden plan as a basis for larger book capacity without increasing reader space, one may visualize the greater ease and economy if a stair is provided from the stack room up or down to an additional level or two, mezzanine or basement, doubling or tripling the book capacity of the same ground area. In a small or medium-sized building there is much to be said

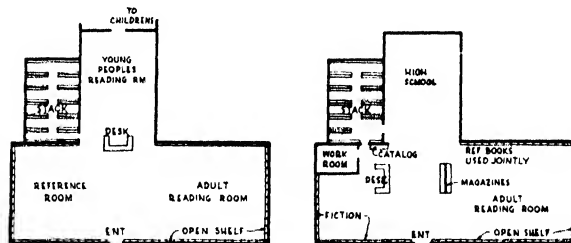
for this small simple stack room in a rear extension. A 2-level stack can be built of wood at less expense than steel, though a 2- or 3-level steel stack has a neat and businesslike appearance, little fire risk, and if set up independently of the main structure and simply crosstied to it, can be installed for less cost than might be expected. Further, a future extension of a rear-stack is easily made. Stacks are seldom placed at the ends of reading rooms, for they involve excessive staff travel and create confusion.

Many building plans permit the addition of a small stack, for example that at Dracut. The basement level can spread out for additional shelf space, the corresponding area on the main floor being utilized for the public service. Such a stack is available to the public, but under close supervision from the desk; it may be screened by a partition entered through a small door.

These simple arrangements of a small stack in a small building grow rapidly into serious complications when the library is large enough to be divided into departments in their own rooms. Further, as libraries increase in size, the proportion of regular bookstock which goes into stack space grows rapidly. It is well to hold to simplicity as long as possible and avoid permanent walls. We show above a simple flexible square plan. The stack at the rear can house practically all adult bookstock, used both for circulating and reference, except the reference

Left. Based on the excellent Highland Park, Ill., plan, with large stack convenient to both adults and intermediates.

Right. Service desk moved to avoid facing entrance. Where to? Preferably to left to oversee both wings and be near new workroom and stacks. The confusion of borrowers and those selecting fiction is kept away from readers and students.



books shelved in the reference room proper. At least two levels can be open to the public without difficult supervision, including reading tables between the bookcases and the rear windows.

IN LARGER BUILDINGS

Few larger buildings (Chs. 28–32) have achieved similar success. Instead, many have partitioned off the spaces or introduced stairs and other obstructions between readers and books, setting up devious routes which handicap all concerned.

Except for the foregoing statement of main purposes, there is no formula for bookstack location and size in the larger building. Chief factors are: the general shape of the building, the number of levels, the question whether there should be any separate departments, the split-up of adult readers into several categories, and whether each or any shall have a separate walled room—all this must be in mind in locating the stack and deciding the levels.

BASEMENT STACK SPACE

In such good-sized buildings as those at Rochester; Toledo; Highland Park, Mich.; Concord, N. H.; Wilmington, Del.; and Richmond, Va.; the center of the basement space otherwise generally wasted, is occupied by a stack of large area. The idea may be copied under many conditions, for the space may be dry and well ventilated; it can be connected by direct narrow stair to the proper point on the main floor. Bookstacks also might be placed underneath the sidewalk, as has been done at Vienna.

LIGHT AND AIR

Before studying solutions we note that developments in damp-proofing and ventilating basements and in lighting interior space remote from windows have given much more freedom than heretofore in locating the stacks, so that at present no hesitation is felt in placing large stack installations below ground if the basement is above flood and stormwater levels, or in the dark core of a building whose lighted perimeter

is fully utilized for staff and readers' rooms. Los Angeles, however, had trouble at first with mould in its newspaper stacks until it installed a supplementary heating and ventilating system to control the humidity.

CHECKLIST FOR STACK SIZE AND LOCATION

The following checklist of elements will prevent oversights, and one will study the plans in Ch. 23–32 for possible ways to meet the local problem.

1. Present bookstock, and stock 20 years hence. (See Ch. 4, Table 3, for further data on bookstock.) Present stock is not a safe criterion itself, e.g., the New England states with many old libraries have high per capita bookstocks,⁴ partly due to failure to discard enough old books.
2. Policy of actively discarding, year to year.
3. Not only stock but use must be calculated, as this influences accessibility. Therefore, policy as to open *vs.* closed shelving and supervision for each part of the collection.
4. Present per capita circulation and its probable increase during next 20 years.
5. Policy of frequently relegating less-used stock to storage. (Increased attention is being given this provision and transferring older stock from open to closed shelves, e.g., the report of the Bodleian Commission, 1931, p. 139, cites Zurich as actually arranging its books, under 21 main heads, by time blocks. As the time groups "become less used they are moved to remoter parts and the newest and most active kept near the reading room.")
6. Proportion of volumes on open shelves to total (the greater the better).
7. Difference in local proportions between bookstock at central and at a branch as to books on open and closed shelves.
 - a. Central building is a storehouse for older and more specialized material, supplementing branch collections. (See Ch. 4, Table 4, for proportion of open and closed stock.)

⁴L. R. Wilson, *The Geography of Reading*. 1938, p. 48.



Haish Memorial Library, De Kalb, Ill. Note treatment of skylight and the two mezzanine stack tiers behind the desk, all in one unified composition. An aisle crosses the balcony, and the ends of the stack ranges are back several feet and therefore are not obtrusive. White and Weber, architects. 1930. Hedrich-Blessing, photo.



Santa Barbara, Cal. The part of the library used by the public is a single large room, uninterrupted by columns. Few divisions, only by bookcases, therefore rearrangement facilitated central desk, adults' and children's reading space to the right, open bookstack in two tiers visible in left background; patio used for outdoor reading in rear. There is also a compact closed storage stack at the rear of the building, for less used fiction, unbound magazine files and other surplus. Francis W. Wilson, architect. Henry Hornbostel, consulting architect. 1917. See Ch. 26 for plan and discussion.

b. Regional obligation, *i.e.*, existence within reasonable travel distance of other large library with an extensive book collection, which will justify the local library in not keeping so large a proportion of older less-used titles.

8. Is adult fiction to be shelved in a separate small space most accessible to the service desk?

9. Is a special room to be provided for magazine readers who in general will do but little book reading? This may affect location of bound periodical files, but their proximity to reference room is more important.

10. Is an intermediate room to be provided for high school or college students, and do they need any stack?

11. Are there to be subject departments?

12. Ease of staff and public in reaching and using stack stairway to upper or lower levels.

13. In large buildings how wide a strip next the exterior wall shall be reserved for reader space between stacks and windows? (*a*) placement of reader tables with relation to daylighting; (*b*) easy, well-supervised access between stack and reading rooms; *i.e.*, the stack may stop far enough from the rear wall for a row of tables

to stand next the windows; (*c*) proximity of appropriate bookstock to each reading room.

14. Methods of getting and conveying stack books to readers and from return desk to stack by booklift? Elevator? Conveyor? Pneumatic tube?

STACK THEORY

The prevalence of free access, and the assumption in the United States that it is most useful and socially effective, has influenced the whole method of book storage. In larger libraries, fifty years ago, most of the stock was shelved in classified order in a separate part of the building, inaccessible to the public. William Poole in the Newberry Library protested, carrying out his determination to place each appropriate portion of the collection in the center of the respective subject room, with an "expert" in charge—a series of departments each with its own books. The pros and cons of both plans have been worked out in a bewildering variety of combinations to secure as many advantages and as few of the disadvantages as possible. The single solid stack at the rear of the building, as at Providence and many other libraries; the solid stack in the center, as at Richmond and Portland; the stack beneath the reading room, as at New York; the divided stack, as installed more recently in the new buildings at Cleveland and Los Angeles; and the spread of stacks directly below the main floor as at Wilmington, Baltimore, Rochester, Toledo and at Manchester, England, are some of the results.

The stack placement problem is vividly presented in A. D. F. Hamlin's statement⁵ of the purpose of library design: "The art of providing the most perfect accommodations for each of the three major requirements (books, readers, and staff), in such relation to each other that the books will be transferred from the shelf to the reader in the shortest possible time with the fewest steps and least labor both for readers and attendants. It is also useful to note that

⁵In Snead and Company's *Library Planning, Bookstacks and Shelving*. New York, 1915, p. 103.

three elements of the library plan must be located with proper relation to the stack and vice versa—the public catalog, the public reading rooms and the delivery or circulation department.”

Which of these should come in closest proximity to the bookstack? Hamlin probably was thinking of large cities, and conditions have changed considerably in twenty-five years; more readers are accommodated in more reading rooms, with book collections split up accordingly. The stack as one vast storage, a comparatively simple problem, has become a series of laboratory equipments, close to the readers who

use them. In the modern public library, there are more borrowers than there are readers-within-the-building, who wish to examine adult non-fiction books directly on the shelves and make their own selection. With the growing tendency to open a major portion of the books for reader access (especially in small and medium-sized cities), access by borrowers comes first, access from the reading room comes second, and access by the staff at the desk comes third.

As many of the most popular books find their place on wall and open shelving in the reading rooms and circulation rooms, the need for placing the bookstack near the borrowers is



Rear-stack structure at Roselle, N. J., has a low roof and encloses an efficient single level storage stack for 15,700 volumes, supplementing 6,000 on open shelves. The workroom behind the service desk is also accommodated. Population 14,000. Probably the largest stack area for any small building, it shows the economy possible in such a treatment, where clerestory lighting above it is desired for the main reading room. Alfred Morton Githens, architect. 1937. Alfred Sands Githens, photo.

slightly lessened, but not sufficiently to invalidate this order of accessibility until one reaches the central library in a city of perhaps 200,000 population. At that point there is such an increase in the number of reading rooms and consequent wall and floor shelving, that readers and borrowers both find a great array of open-shelf books, and the order of accessibility is reversed; it is the reference readers and staff rather than the borrowers who need to be closest to the stacks.

This major problem of book storage, which becomes more acute with great metropolitan collections, is so complicated and specialized that any city of a quarter million population must determine its policies as to (a) proportion of stock, and what parts of it are to be on open shelves for the public; (b) the number of public reading rooms and how generous should be the bookstock adjoining; (c) openness and simplicity of the plan and structure, preventing or encouraging more direct and flexible access for readers and staff between rooms; (d) importance attributed to a general storage stack supplementing local stacks plus open shelving.

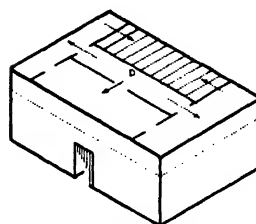
When these questions are answered and rough sketches made, the extent and best location of the block stack can then be decided. With given capacity, shall it be underneath the main floor as in the open plans in Ch. 32; in the center, as exemplified in Ch. 31; in the upper floors above readers; at the rear, as in Ch. 30. One inescapable problem in all large buildings is that of adequate daylight in the central portion of the building; this has a direct bearing on stack location, as already seen."

With these general remarks we come to the three major stack placements: the "Rear Stack," the "Central Stack," and the "Basement Stack." The following brief summary is supplemented by individual analyses of the three groups of plans in Chs. 30 to 32.

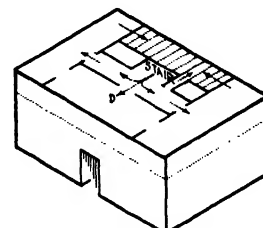
REAR BOOKSTACK

Normally a city library is large enough to have reading rooms across the ends, requiring a route

of communication from end to end. The stairs naturally adjoin this route. The most economical stair position is through the center, between reading space at the front and stack at the rear; but this unfortunately and inconveniently separates the two (Birmingham, second floor) so



Rear Stack



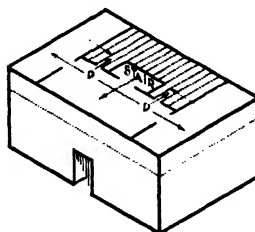
Birmingham

books from the stack must be brought across it. If the front room is used for the popular book collection, passage to the end rooms may be through it, and it may be connected with the stack at the ends (Bridgeport, second floor, with charging and return desks flanking entrance and directly connected to stack). Separation of the stack from the readers is a fault that increases with the distance and time consumed in getting to it.

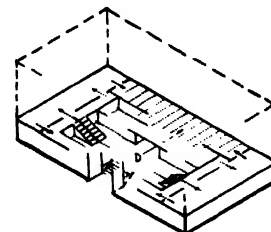
At Detroit, Indianapolis, and Philadelphia, for example, reading rooms are disposed around three sides of a great square or rectangle, the center taken up with:

1. Workrooms and miscellaneous minor rooms.
2. Light courts of large or small dimensions, to daylight the central area.

"For a rather remarkable collection of plans and views of large national, university and public libraries in various countries see *L'Architecture d'Aujourd'hui*, special library number (in French), March 1938, 102p. 33 francs. The Bibliothèque Nationale receives special attention as to stacks and the methods of storing and bringing books. The articles are necessarily somewhat general, however, and fail to make comparative evaluations.



Bridgeport



Indianapolis

3. Stairs of monumental proportions (Philadelphia).
4. Great delivery hall and light courts (as at Detroit).

The great common factor in these three plans, however, is the immense stackroom extending along the rear, gathering there the major book resources of each library. (See Ch. 30 for plans and analysis.)

It may be said that these three buildings represent a stage in library planning just preceding the development of the "central tower stack" principle, which will next be discussed as applied at Cleveland and Los Angeles. The remoteness of the stack from the majority of readers, and the problem of finding and delivering books in a manner satisfactory to the public without excessive page-boy expense led to this next step so inevitably that the great rear stack block method may never again find favor in large public libraries.

In a larger library that follows the once universal issuance of most of the bookstock through the delivery desk, the central communication may be developed as a circulation room, set against the stack with stairs in front, like the typical university library (Detroit, second floor). Only the end rooms connect directly with the stack; their material may be served and charged locally.

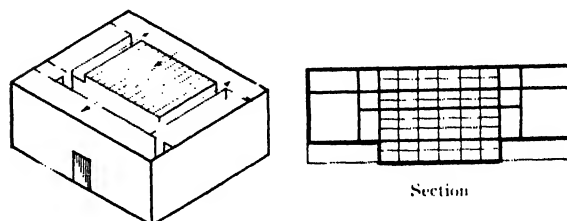
The circulation room may be pushed forward, placing the popular books in it, setting it at a level between the first and second floors of the end rooms, and reducing the second story from room to a mere gallery. The stairs naturally go to the ends (Indianapolis). This type of plan with its many changes of level and consequent need of short stairways and ramps seems too complex to serve as a model; it is inefficient; yet the interior is so striking and effective that several smaller libraries (*e.g.*, Mobile) have copied it.

New York and Philadelphia reserve their upper floor for readers, carrying the rear-stack only up to this floor. The books are brought up vertically from stack to reader. This arrangement,

though efficient in book delivery, necessitates excessive stair climbing; but only the rear reading rooms have direct connection to the stack. The front rooms require a horizontal book-conveyor, not an insuperable objection, but it retards delivery of books.

CENTRAL STACK

Placement of the main stack in the building's center is based on sound reasoning: an inner



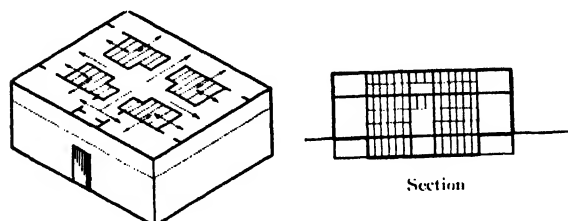
core of books where light is not wanted, an outer ring of reading rooms utilizing all the outside light, each tapping the bookstack and therefore adapted to subject-departmentalization. Any number of floors are equally served by the stack.

Public access to these rooms is the only difficulty. In theory there are two possible arrangements: first, circuitously in a corridor between stack and reading rooms, breaking their direct contact but preserving the stack as a unit; second, radially in a cruciform shape through the stack, dividing it into four parts but preserving direct contact with reading rooms. Most plans are a compromise between the two.

In the first, the corridor across the rear can be omitted; but the rear rooms are particularly difficult to reach. One of the side passages may be omitted (Cleveland, second floor, Ch. 31). Note that in this floor the stack could occupy the entire center of the plan without affecting public access; or the rear reading room might be used as workroom space and entered through the stack or side reading rooms, omitting both side corridors (Portland and Richmond, Ch. 31). Fort Worth, the latest example, retains the side corridors. The front reading rooms are necessarily separated from the stack.

In the second, the radial scheme, the stack adjoins each reading room, yet there is direct

access to them by the public, following the planning principle of immediate approach to the center and direct distribution from the center (Los Angeles; Cleveland, first floor; proposed plan for Seattle). The division of the stack is a defect, for irregular growth of the subject-divi-



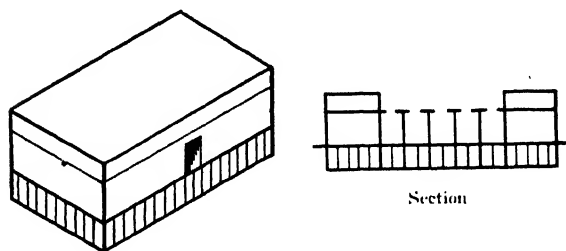
sions requires a continuous system of stacks. We suggest this be achieved by keeping the radial passages low so the stacks may join above them.

The pros and cons of the central stack, as worked out at Portland, Richmond, Cleveland, and Los Angeles, are worthy of special study from the plans in Ch. 31, for it may be that new developments can be evolved which will utilize the merits of the general idea without some of its weaknesses.

BASEMENT STACK

Combines four important qualities; the entire first floor (except for workrooms) is for public use, the bookstack is directly reached from each department of the first floor, the bookstack is continuous so reassignment of its space is easily accomplished. It has been called the "Open Plan" because, like a bank or department store, the first floor is unobstructed except by supporting columns, and the divisions between departments are formed only by bookcases continued to the ceiling by glass screens where desired. The "Open Plan" was developed in the libraries at Somerville and Springfield, Mass.; more recently, Wilmington, Del., Highland Park, Mich., Baltimore, Rochester, Toledo, and Brooklyn have used it.⁷ (See Ch. 32.) This general arrangement places the "live" book collection on open floor cases on the main floor near the majority of the adult readers, with the closed

bookstack directly beneath them, extending two or three levels deep into the basement. From each of the departments the less-used bookstock is quickly accessible by a short stair. This is no farther removed from the first floor than a mezzanine would be, yet does not clutter up the interior, destroy its openness, or make future changes difficult. Administration, order, cataloging, and special departments are on upper floors but are directly connected with the stack by lifts, elevators, and stairs.



The horizontal stack immediately below the main floor of the large public library is advocated by the English librarian, L. Stanley Jast, who incorporated it in the recent Manchester building. In outlining its merits, he wrote:⁸ "The cross stack brings the building into closest organic relation to it, making it as it were an annex of every special library or reading room, and of every working room in it, instead of being 'a sort of warehouse clapped onto the library.'"

INCLUSION OF CARRELLS

The increasing tendency to place large storage stack areas either under the main floor or in the center of a large building directly discourages the use of carrells, because daylight is not available. Carrells are discussed further in Chs. 14 and 40.

⁷A good discussion of the Philadelphia, Los Angeles, Baltimore, and Cleveland plans, by Herbert S. Hirshberg, appears in *A. L. A. Bul.*, 27:732-37, Dec., 1933. See also A. M. Githens, "The open plan," *Lib. Jour.*, 58:381-85, May 1, 1933.

⁸*The Planning of a Great Library*, London. Libraco, Ltd. 1927.

CHAPTER 16: CHILDREN'S ROOMS: PROVISION FOR VARIOUS AGE-GROUPS

THE social importance of the library and its books in the education of the younger generation is so great that many librarians and educators feel its services to children to be the library's most valuable work.

The children of America are borrowing roughly one hundred and fifty million public library books a year, a figure which may double within the next generation. The children's room in the public library exerts a marked influence on the minds, tastes and ambitions of these five-to-fourteen-year-old young folk. Thousands of boys and girls find the library their only haven from degrading home and neighborhood influ-

ences. In this comfortable retreat their imaginations unfold as they become familiar with the pages produced by great minds in inspired moments. Competent children's librarians have learned the art of penetrating to the inner lives of boys and girls, setting them at their ease, discovering their interests and helping them find the particular book and page which meet the need of the moment. All this is greatly aided by an atmosphere of cheerfulness and welcome.¹

Concerning the quality of books selected, the personality, cultural background, professional training and ability of the children's librarian and her assistants, and the character of the children's room itself, no standard is too high. Although elaborate architectural design and decorations are inappropriate, the architect and

¹See E. L. Power, *Library Service for Children*. A. L. A., 1930, for the standard authority on the subject. A revised edition is in preparation.



Junior Room in new rear wing of remodeled library, Teaneck, N. J. Unpretentious, rich in simple detail and bright color. Interesting in the bookcase design, the light color of woodwork, variety of chairs, good fireplace, inexpensive and effective light shades. George M. Cady, architect. 1937.



Children's Library, Westbury, L. I. An interesting example of a special library building given for the use of children. The high window heads light the center of this wide room, while the curved ceiling adds to its feeling of intimacy. Peabody, Wilson and Brown, architects. 1924. Tebbs and Knell, photo.

library staff may well devote many hours to planning the children's room. Details can be interesting and effective, giving the whole room unusual attractiveness and showing plainly the foresight and understanding which delight the hearts of boys and girls.

Many parents and teachers visit the children's room to consult and borrow its books; they too must be kept in mind. Among other things, where the library can afford it, there should be a special corner shelved with a noncirculating collection of "best books" and editions where adults can look them over in quiet and comfort.

LOCATION

A common error in library planning is to place the children's room at such a remote point that it is disconnected from the rest of the library. Despite its advantages in simplifying discipline and aiding departmental supervision, children and staff feel this isolation. It widens the gulf which children as adolescents have to cross, and instead of passing without interruption to adult collections, hitherto never seen, they give up altogether the use of library books. Parents and teachers do not have easy access from one room to the other. "Adult and children's room staffs

forget they are parts of one complete organization."

Methods are suggested below and in Ch. 12 whereby children may use the same entrance with adults, but inside are diverted by a corridor or railing to a room and service desk of their own. It is also pointed out that additional entrances add to the cost of the building and its service.

Staff service cost is another factor. In many branches the children's room cannot be operated unless the young people get their help and have their books charged and returned at the adult service desk, because only one or two assistants can be afforded; one service point is much more economical during both quiet and busy times. For this reason smaller libraries generally place the children's reading room at one end of the main floor and the adult room opposite. Where children have access to adult books, adults are greatly disturbed by the confusion they cause, and the young people secure inappropriate books, *e.g.*, an overdose of fiction.

Where the volume of the children's work is sufficient to keep two full-time persons busy during the children's hours, there is little economy in combining the rooms, book collections, and charging desks with those provided for adults. Both children's librarians and adult reference and circulation librarians agree that a separate charging desk for the children is better for service.

When it is desired to have both children and adults on the main floor, the interior problem has two solutions, (a) single delivery desk on main floor, handling adults and children, as in the small library. Simple and economical if children are quiet and do not come in droves, but generally unsuited to buildings lending over 100,000 or 150,000 juvenile books per year; (b) adult service desk in centrally located adult department, with separate service desk in children's room, both on main floor. In smaller libraries during quiet hours children can use the adult service desk, thus effecting a salary saving. The economy of this supervision must be com-



Briggs Branch (addition to school house), Trenton, N. J., illustrates the problem of handling children and adults at one entrance and one desk, especially during the after-school rush. Yet for economy this combination is the most practical in the smaller library or branch. Note low bench for small children, and vertical partitions on shelves for thin slippery picture books. E. K. Sibley, architect. 1932.

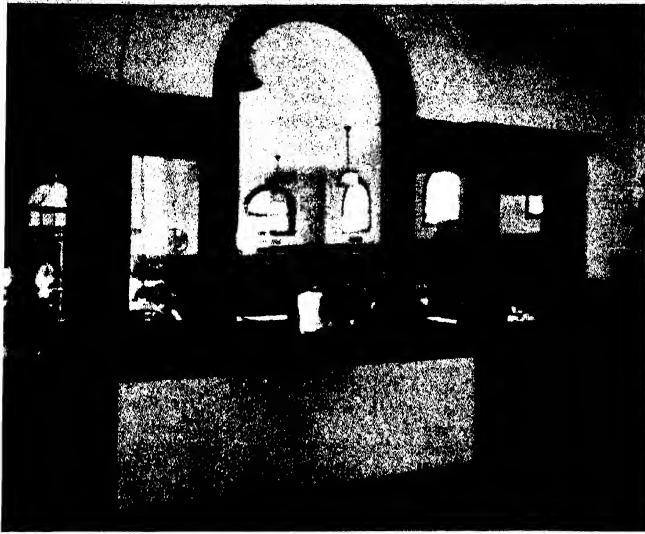
pared with that possible with a separate outside entrance, for the children's noise may be too much for the adults.

But in cities of 75,000 to 100,000 population, adult demands for first floor space are so strong, and the necessity for keeping adult services together to enable individual readers to utilize the entire bookstock is so important, that the children's room has to be put in the basement or on the second floor.

BASEMENT ROOM

In larger libraries a favorite device is to place the children's room in the basement, usually with separate entrance. Many children's librarians protest against having children's rooms in basements or accepting any excuse to move them there. Healthful and sunny surroundings, they feel, are hardly ever obtained. Certainly if cheerfulness, comfort and good lighting cannot be secured in the basement of a particular building, it is not fit for the children's room.

Basement space should be accepted with caution, for: (a) it suggests that children have been relegated to secondary space, (b) it is often both dark and damp, (c) it is seldom provided with a double floor and airspace: dampness may seep through and loosen linoleum, cork carpet or rubber tile, unless asphalt tile is laid underneath



First floor entrance hall at Skelton Branch, Trenton, N. J. A stair, at the right of picture, takes the children past this glass partition through which the adult staff can supervise their passage, controlling their noise and confusion. The Fowler Co., architects, 1929.

to intercept the moisture, (d) problems of noise and discipline are serious, especially around the entrance and at the windows. At Queens Borough, N. Y., both the Central and the Glendale Branch, the principal difficulties were solved by a wide continuous areaway planted with shrubbery, permitting windows of generous height and pleasant outlook. Basements may be entirely satisfactory if the lot slopes to the rear or toward one end and the children's room is placed there, especially if the approach is attractively designed and landscaped. Ceiling height and ceiling beams, adequate window height, the combination of windows and bookcases, perhaps a bay window at the end, the proper floor covering—if these are carefully studied and if the slope and character of the ground are such that dampness will not create a musty odor, the basement room may be a great success; but these conditions cannot be overlooked.

SECOND FLOOR

Much can be said for second floor locations, adopted in a number of city branches where ground space is at a premium and lighting inadequate. Children are not averse to climbing the additional stairs, and probably more children's rooms should be placed on second floors. The costs of building may make second floor location more expensive than basement. Despite

this and the danger of disorder on the stairs, it has been successful in many cases, especially where the building has to have an additional floor for other reasons.

In New York, Detroit, Washington, and Newark the high cost of land and the confusion from large juvenile crowds in some branch neighborhoods compel second floors entirely devoted to the children, who arrive by: (a) separate entrance up an enclosed flight of stairs at the side of the building (Weequahic; Runnymede; Hunts Point; Mt. Pleasant), or (b) similar stairs at the front of the building (Northeast Br., Trenton; Georgetown Branch), or (c) a stair opening directly into the main front hall (Petworth Branch; Clinton).

ENTRANCES AND STAIRS

The distance from the outside entrance to the service desk needs to be adequate for after-school crowds. Children's room use takes a sudden curve upward at 3 P.M., and reaches its peak about 4:30, then declines until about 5:30. The peak seasons run roughly from about January 15 to April 1, and from October 1 to December 10, the busy season as a whole being about six months long and closely related to the school terms. A number of libraries are so located that there is an especially heavy congestion at peak periods. To get children inside and out of the cold or rain there are instances where they have to be allowed to pass the desk before they have returned their books, resulting in great confusion. This is more easily avoided where the children have their own entrance and the adult patrons do not increase the throng. Then, too, the children are destructive of planting around an entrance, and are apt to leave a litter of bicycles and roller skates, which destroys the dignity of the main entrance.

While the children's room is usually more attractive and satisfactory on the second floor than in the basement, the stair to it is generally longer, for the first floor is generally higher than the basement, and sometimes to place it without detracting from the appearance of the building

is difficult. If the entrance to the children's stair can be supervised by the assistant at the adult desk as at Skelton Branch and Petworth Branch, the inevitable disorder is much reduced.

Outside stairways such as that at Washington's Mt. Pleasant Branch present difficult problems: they are likely to add nothing to the beauty of the building, cut off exterior light, increase noise and problems of behavior, and are unpleasant in snow or rain. The outside stairway at Hild Branch has been abandoned because supervision was too difficult.

PROVISION FOR INTERMEDIATES

Children's room location will hereafter be greatly influenced by the possibility of a room for young people of 14 to 18 years. How shall such a room be related to the children's room? This is discussed in Ch. 14, as it is primarily connected with adult reading-room provision. At Washington, D. C., where work with children and young people has always received careful study based on a consistent policy, the Georgetown and Petworth branches provide more completely for space and book equipment suited to children of each progressive age-group. At

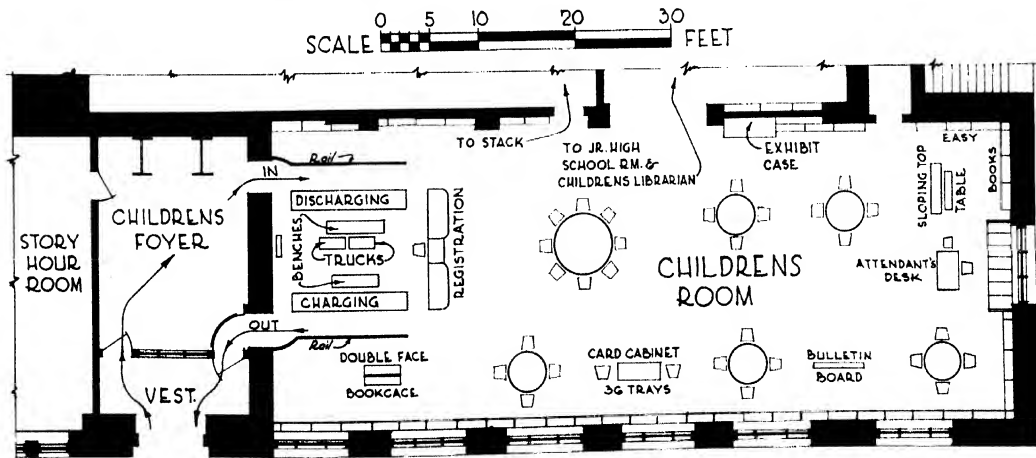


Children's Room, Wellesley Hills Branch, Wellesley, Mass. A room of distinctive character due to form, proportion, restraint in detail; furniture is in character. Bilateral lighting. Hampton F. Shiver, architect. 1928.

Georgetown in the second-floor children's room one side is given to readers of 2d- to 4th-grade age, the other side to 5th and 6th. The junior high school students, grades 7-9, use an area enclosed in low bookcases, but this too is in the children's room proper, though labelled "Older Girls and Boys." If children need adult books they are given a card of introduction to the readers' adviser on the first floor.

Georgetown's Students' Recreational Reading Room, set off by low bookcases in the central portion of the main floor, is the senior high school student's introduction to the adult department. It contains a few books from the chil-

Confusion can be avoided when the children leaving the building are separated from those entering. Mt. Vernon, N. Y., separates them by a low iron railing, reserving the greater part of the entrance hall for those entering and waiting to pass the desk. This entrance hall is protected from the weather by a narrow vestibule. Note the service desk in three separated wings, and the tables, display racks and individual items of equipment.



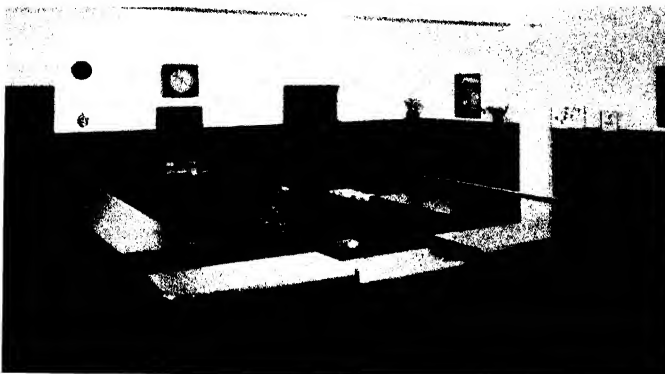


Lockport, N. Y., Children's room in basement, entered under front portico (cf. Bloomfield, N. J., in Ch. 27). Obscured glass in the four windows as they open into shallow areas; a solution of a difficult problem. Knotty pine wainscot; acoustic tile ceiling. Woodwork and window seats consume valuable space when the book space is very inadequate in this small room for the children of a city of 25,000. Schmilt Bros., architects.

dren's room, for "stepping stones." There are many attractive editions, and one or two books of outstanding merit on each of a great variety of subjects intended to lead to the wealth of the whole library.

High school reference is done in the adult circulating and reference rooms downstairs, and if need be in the students' recreational reading room. But the latter is primarily for recreational reading and the development of individual interests rather than for compulsory school work. Most children wish to graduate from the chil-

Children's Charging Desk, Mt. Vernon, N. Y., placed between entrance (right-hand door) and exit at left. The book card file is recessed in a counter top. The central portion of the nearest counter is at regular desk height for the assistant to handle registration. The farthest section of the desk is shown in detail in one of the drawings in Chapter 42, with the three pull-out bin shelves on easy rolling suspension. Courtesy Library Bureau.



dren's room by the time they reach the 9th grade, but many continue to draw books from the children's room after starting in "adult." This example has been outlined in detail because it seems significant of the recognition likely to be given in future to the needs of each age-group, as these young people are indeed a bit self-conscious of their age, grade and requirements. "This planning is our best judgment up to the present time. The last word is by no means said on the planning of a children's room," says the children's work director. Mt. Vernon, N. Y., the latest example, has children's, junior-high and senior-high school rooms.

SIZE

Table 9 in Ch. 4 shows the comparative proportion of seats for adults and children in small and medium-sized central and branch libraries. These figures may be taken as referring to the children's room proper, with 25 sq. ft. per reader. As so many children are moving about rather than seated, several libraries have removed many of the chairs, but these should be provided and stored in the event of future need. Add adequate space for office and workroom, with 100 sq. ft. per person, and check the following activities to see which are to be provided for: separate story-hour room; reading-club room; classroom if the children's room of the public library is used by visiting classes for receiving instruction in the use of books and libraries; room for lectures or moving pictures connected with books (all or any of the foregoing may be combined in one room); shelving and work space for work with schools, *i.e.*, lending collections of books for classroom use, etc.; convenience to shipping door. The existence of effective libraries in nearby schools has much to do in determining the amount of space needed: how many pupils come to the children's room? do they come for personal reading, or school assignments, or both?

WORKROOM

Certain work other than that connected with the lending and return of the books is greatly

slowed down when an attempt is made to do it at the children's desk. Cities of 100,000 up will provide a workroom close to this desk but separated from it, where the children's librarian and her assistants may carry on their extensive work of book selection and perusal, inspection for repair and rebinding, correspondence, telephoning, conferences and records connected with the handling of the children's service at the central library and the branches.

In large libraries with branches the director of children's work for the system should have a small glass- or wall-enclosed office of her own, where she may carry on interviews, dictation, and telephoning.

At Washington, population 600,000, the director of work with children (including schools) recommends that the proposed new central building have an office each for the director and assistant director, a large workroom for the staff of assistants, an adjoining office for the supervisor of work with schools, and a large workroom for four professional assistants for making up school sets and reference works, four pages and a messenger. This combined staff supervises the service to 190 schools that lend 600,000 books from the schoolroom collections, and the much more intensive and specialized children's work in the ten branches lending 557,000 books, plus the central library children's room which lends 133,000 books, a total of 1,290,000 children's books a year. In some libraries the school work is separately organized and the work-spaces adjoin but are not combined.

STORY HOUR AND CLUB ROOMS

Increasing pressure of service and inadequacy of the staff have forced abandonment of story programs in many cities. The question is always pertinent whether or not this assembling of groups of children is conducive to the spirit and purpose of the library, whether it emphasizes group entertainment instead of real reading, or whether the amount of subsequent reading outweighs the expense for housing, the time consumed or the crowds and noise involved. Val-



Hollywood Branch, Los Angeles, offers several suggestions: fire place, recessed glassed bookcases with space above and the reading tables built around columns.

uable space may be tied up for long periods between story hours, sometimes for a week at a time, but, again, it may be used for other meetings, adult and juvenile. Various building plans in Chs. 23-32 show many arrangements of story-hour or club rooms. Such a room may be placed next to the children's room so that it can be conveniently used for story hours, and during school hours by women's clubs and other adult study groups. An alcove may be used jointly for reading and story-telling, closing it with a draw curtain. In several such cases glass doors or roller screens have been fitted over the bookcases so that the story-hour crowds will not steal the books.

If a story-hour room is provided, it should be equipped with low chairs, possibly collapsible or removable, so the room can be used for other purposes. Portable canvas chairs with bright slip-covers are used in the Pasadena lecture room and Los Angeles branches. A base plug for stereopticon or simple "movie" equipment is desirable. A fireplace gives an air of intimacy and cheerfulness.

LIGHT, HEAT AND VENTILATION

As children's rooms are chiefly used in the daytime, many of them closing entirely at 6 P.M., daylight is a first consideration. The desk should be turned to avoid glare and reflection from windows. Heating should be easily regulated



Children's Room, Mt. Vernon, N. Y., showing the corner for small children, with sloping reading stand and small shelf compartments for easier handling of large, thin picture books. The vertical files are for the picture collection, used by older children and serviced by the assistant.

and quick to respond. The staff must be comfortable at 70 degrees when there are only a few visitors or none at all. In the peak hours more heating is required, for unless the room is effectively air-conditioned a crowd of children, especially on a muggy day, will make it necessary to open the windows for fresh air. The windows should be especially constructed so that the assistants can open them very easily. Children are not so critical of extreme heat or cold as adults, but are just as susceptible. Owing to a shorter schedule and the need for extra supply at peak hours, the heat and ventilation should be under separate control for this special area.

Noise originates chiefly at the entrance and in corridors. These, instead of having hard concrete or marble floors, should be noiseless, using rubber, linoleum or cork. Walls and ceilings should be lined with sound-absorbent material. Double sets of doors should be provided at the outside entrance.

WASHROOMS

Children require separate toilet facilities, under easy supervision, but preferably not opening directly into their reading room. They are bothersome where the library is cursed by serving as a comfort station because schools and neigh-

borhood traffic centers are near by. The problem is not nearly so difficult in large cities as in small, where the younger population swarms to the library as a habit. In many such cases the library refuses to operate any washroom. Special supervision for two or three hours may be necessary unless the room can be under lock and key.

SHELVING

Continuous bookcases, five shelves high, line the walls of the typical children's room. In a smaller building with adult and children's rooms within the same walls, the children's bookshelves are often carried up to the same level as the adults; the upper portion of the children's sections covered with hinged bulletin boards, with cupboard space behind. Some children's librarians think this unsatisfactory from a practical viewpoint, because it is a problem to keep displays fresh and attractive, and the cupboards accumulate "junk."

One portion of the room should be planned for little children, with shelves 12 inches deep for large picture books, near the special low furniture. Large, thin books can be kept in order by vertical divisions of thin wood. See Ch. 41.

Shelving for beautiful editions or rare old titles behind glass or wire-mesh doors must not be overlooked. In larger libraries a bookstack should adjoin the children's room to house infrequently used books, including the favorites of a previous generation which adults constantly request for rereading, duplicate copies not needed in dull seasons, and holiday or other seasonal material brought out once or twice a year. Shelving such material in the children's room discourages the children in finding books that interest them. Work-shelves for sorting books preparatory to shelving them are essential.

FURNITURE

In planning the equipment, the first question to study is the route of the children as they come into the room, leave their books, go to the shelves, find a new book and bring it back to

the desk for charging before they leave. The problem of placing the desk is the same as for the adults' desk, analyzed in Ch. 13. The interior arrangement is described in Ch. 42.

Some of the chairs and tables will be of regular adult height to accommodate older children, but chairs of 14- and 16-inch height should be provided, with special tables of 24-, 26-, and 28-inch height for the small children; the 16-inch chairs and 28-inch tables being most important. The proportion of chairs and tables of the three heights may arbitrarily be divided evenly, but is affected by the ages of near-by school population. For the very young, sloping-top reading stands with low benches on both sides are very popular. All are described in Ch. 42.

All the furniture in the room should be carefully designed and dimensioned. Architects should supplement the made-to-order furniture catalogs by a study of spaces and needs, and consider whether these stock pieces are adequate and appropriate. Chairs and tables should be of a simple design, not too heavy nor of too dark-colored a wood, nor should they be adult tables and chairs with legs sawed off to make the right height. Shopping around often results in a medley of styles, colors and finishes that looks sad indeed and saves very little. Perhaps some good friend will help; one branch children's room was beautifully furnished as a memorial gift.

An adequate card catalog, rack for children's magazines, dictionary and atlas stand, book display case, sufficient vertical file cases for pamphlets, pictures, etc., useful in reference work, bulletin boards, a few glass exhibit cases built-in or free-standing—these are essential. A large revolving globe as a piece of floor furniture gives much pleasure, but if it tips over——!

Care should be taken that there are no sharp corners on any chairs, desks or tables.

FIREPLACES

If a fire cannot be built, the fireplace is a failure; the children feel that someone made a great blunder. If colored picture tiles representing

children's story themes, or bronze tablets designed by children, or carved stone or moulded cement-work designs, or quotations about children's books, can be worked out so that everyone feels the results are right, well and good; but many of the results are not so happy in permanent form of wood, metal or stone.

DECORATIONS

The temptation to use children's room walls for elaborate mural decorations is hard to withstand, and some children's rooms so decorated are extremely attractive; others are horrible. Children are more observant of pictures than adults are, and study their details with so much more care that they sooner become tired of seeing the same pictures. The scheduled showing of carefully selected framed pictures, sculpture and models in which children will take special interest is much more desirable.

Faneuil Branch Library, Boston, Mass. Children's end of reading room. Kilham, Hopkins and Greeley, architects. 1932. Paul J. Weber, photo.



CHAPTER 17: THE PREPARATORY DEPARTMENTS AND THE CATALOGS

THE catalog is the guide to the books by author, by title, and by subject. It indicates what books the library possesses, how they are classified, and where they are shelved. The catalog department prepares and maintains it. The catalog room is its workroom, though this term has occasionally been applied to the room in the few large libraries where the catalog is installed in a room of its own. The layman would expect cataloging to be done in a cataloging room, but by long usage it is termed the catalog room or department.

The order department has charge of purchasing, receiving, and checking new books; it is combined with the catalog department in all but the larger libraries, and in such case should adjoin or be close to it. When both departments are in the same room it is called the catalog room, or, in large libraries, the preparations department.

Decisions as to what books to order are made by others and passed to the order department. In smaller libraries the ordering is generally handled by the librarian with the aid of a clerical assistant, or by a trained worker who serves both as order assistant and cataloger. In larger libraries the volume of special materials—periodicals, documents, serials, gifts—calls for special assistants with special knowledge. They may be attached to the order or catalog department, for their work is a combination of both general processes.

LOCATION OF PUBLIC CATALOG

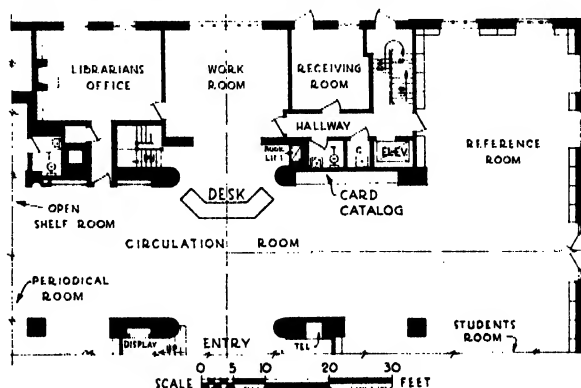
The public catalog must be accessible to many departments. Rather than the desk, it might perhaps be considered the focus, the true center of the library's functional organization. The more experience one has with library planning, the more vital its position appears. Yet sketch

plans are likely to ignore it, a costly error, paid for later by inconvenience. The following proximities are the most important:

1. Near the front entrance and if possible within sight of it, so the minimum number of patrons need be directed to it. Anyone coming to the library for a specific book or material on a specific purpose goes to it at once. In cities of over 200,000 population, an assistant should have a desk close to the catalog to aid patrons and answer telephone inquiries involving its use.
2. Close to the reference department, if there is one.
3. Close to the adult circulation department, for here will arise a great number of staff and reader inquiries about books, requiring a search of the catalog.
4. Close to the intermediate department, if there is one, for the same reason as in 3.

All other proximities are secondary to its convenience for readers consulting it to find their books. If circulating, reference and intermediate departments adjoin or are near each other, the catalog is ideally located between them.

In Concord, N. H., the card catalog is placed close to the circulation desk for general staff and readers, to the reference room for continual use, to the students' room and to the staff workroom where the cataloging is done. The popular library and reading rooms at the opposite end have little use for the catalog.



5. Close to the bookstacks, if they are open to readers as is customary in smaller libraries, for readers usually look up call numbers to guide them to the books they wish and in such a self-service arrangement they cannot be expected to walk long distances from catalog to books. If the stacks are closed, as in most larger libraries, this proximity is not important, for books are brought to the desk by pages, who receive call slips by hand or by mechanical transmission. The burden of their travel is not considered as serious as that of readers.

6. Close to the catalog room, where the cataloging is done. (See Richmond diagram, page 157.)

PROXIMITIES OF THE CATALOG DEPARTMENT

Accessibility of the catalog is vital to save the steps of the catalog staff. Besides filing new cards or withdrawing old cards for additions, additional notes or revision, they must constantly consult it in preparing cards for new books, to insure consistency between new and old material. But space anywhere near the public catalog of a large library is too valuable to the public and to the public service staff to be given up to the preparatory departments. There are also complications created by staff and public being in each other's way. So large libraries are generally forced to make a duplicate, called the Official Catalog, for the use of the order and catalog department staffs.

The official catalog is generally placed in the catalog department. Necessary or not, an official catalog is always somewhat of an evil because of the great expense involved in its upkeep. It should not be started until it is unavoidable. The whole problem is to weigh the time losses (*a*) of readers, (*b*) of public service staff, (*c*) of catalog and order department staff, against each other and to keep all three at the minimum.

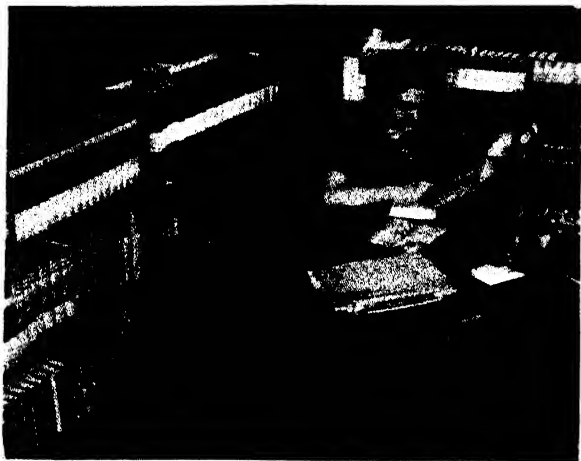
In 1924 Dr. W. W. Bishop, in his *Practical Handbook of Modern Library Cataloging*, held that if the library "is to have a continuous existence and growth, an official catalog had better be started early—even when it may seem an



Preparatory department, Mt. Vernon, N. Y., is amply lighted by large high windows and indirect Ainsworth fixtures, designed to be inconspicuous; "protective coloration." The room flanks the two-tier stock, open for cross ventilation. The desks are arranged in two rows in one large area, permitting easy shifts as time goes on. Shelf list and other files, and bibliographic tools, are arranged along right wall, with numerous consulting stands. Cross and Cross and Alfred Morton Githens, architects, 1938. Alfred Sands Githens, photo.

absurdity." Since that time effective and inexpensive reproduction of catalog cards has been achieved by photographic processes, and as it is now possible to create a duplicate catalog on reasonably short notice, the official catalog need not be established until the need arises, though space for it should be earmarked.

Some libraries, *e.g.*, University of Pennsylvania and Brown University, have attempted to avoid the need for an official catalog by having the catalog department near the reading room and building the catalog in the wall between the catalog workroom and circulation or reading rooms, with drawers which can be removed from either side. This plan, ingenious as it appears, has never met with great success because of the limited space for expansion, the necessity of stretching the catalog along in one long line (only a problem when the catalog is so large that it is aggravating to have to walk from *A* to *Z*), and the trouble caused when trays are not immediately replaced and must be sought in two rooms. In addition there is the annoyance to the staff, for from their side the drawers read consecutively from the upper right-hand corner of the catalog to the lower left and the necessity of removing the drawer from the cabinet and turning it around for even the briefest consultation. The greatest objection, however, is the necessity of assigning to the catalog room



Why catalog and order departments need 100 square feet per assistant! The volume of materials handled and moved about frequently, is suggested by this view of one worker in the Order Department of the Cleveland Public Library.

space that is easily accessible to readers and so should be devoted to their use.

Second in importance to being close to the catalog, either public or official, is the need that the catalog department be near the order department, because of the consecutive and continuous processes carried on by these two departments.

ACTIVITIES OF THE PREPARATORY DEPARTMENTS

Intelligent planning requires knowledge of the steps involved in getting a new book to the shelves, as it goes through the order and catalog departments. In a typical library the steps may be outlined as follows:

1. Titles¹ requested or suggested for purchase are received and copied on order cards.
2. Trade items consisting of author, title, publisher, edition and price must be verified or filled in.
3. Titles are checked with the library's catalog and list of books on order to avoid unintentional duplication.
4. Orders are approved by the librarian, written up and sent to the publisher or dealer, and recorded in a file of "orders out."

5. If the library uses Library of Congress printed cards in its catalog, either a duplicate of the book order of all new titles or a copy of it on slips is sent to the Library of Congress as an order for these cards.

6. Books are received, checked with invoice and original order, and bill is forwarded for payment. Record is withdrawn from file of "orders out" and either transferred to a file of "orders received" or revised and returned to the same file, as a record of books being cataloged.

7. *Order or catalog department.* Books are accessioned, *i.e.*, assigned a consecutive serial number as they are added to the library.

(Above this line are the activities generally handled in the order department.)

8. Duplicate copies and added volumes are separated from new titles.

9. *Catalog department.* New titles are matched with Library of Congress cards or with the L.C.'s report on the order for the cards.

10. Books are cataloged, classified, shelf-listed,² and have their subject headings assigned. Each of these is a complex process which might be listed as several steps, but they are grouped together here because they are generally performed by a single individual more or less simultaneously.

11. The necessary cards are made either by adapting Library of Congress cards or by typing and duplicating cards in the catalog department.

12. Book cards and pockets or bookplates are typed or lettered and pasted in books. (Pasting not necessarily done in the catalog department.)

13. Call numbers are lettered on backs of books, the library's marks of ownership are added,

¹The word "title" is technically used to denote a book. There may be several copies of this book, but all together would comprise one "title."

²The shelf list is an indispensable record, usually kept on standard 7.5 x 12.5 centimeter cards, of all the books in the library arranged according to their classification numbers, *i.e.*, as the books are arranged on the shelves. As the only record of the number of copies of each title in the library and the history of each copy, it is essential for inventorying the collection.

pamphlets are reinforced, etc. (Not necessarily done in the catalog department.)

14. Books are sent to shelves.

15. Catalog and shelf list cards are filed.

16. Order cards are withdrawn.

These steps cover the procedure only for books acquired by purchase. In addition those received by gift, exchange, and subscription must be considered. It is obvious that the steps in getting books from publisher to reader are so closely related that the divisions between the departments for book ordering and cataloging are more or less arbitrary. The working quarters should adjoin. In some libraries the accessioning is part of the catalog department's work, in some it is done in the order department. Likewise sending the order for Library of Congress cards may be handled by either. In fact, throughout the work there is so much overlapping that some libraries have found it convenient and economical to combine the two departments under a single head. Libraries in cities of less than 200,000 population may well have only one department, while the very small libraries will have all of this work done in the librarian's office or in a general workroom adjoining it.

Both groups of workers need to use the same bibliographical tools, the order files and the library's catalog. For this reason, too, the rooms

should be adjoining, or the departments should be housed in the same room. Since some of these bibliographical tools will also be in demand by the reference department and by the library's more scholarly patrons, there is an advantage in having the order and catalog departments accessible from the reference room. A service stair and electric booklift connecting them may simplify this problem.

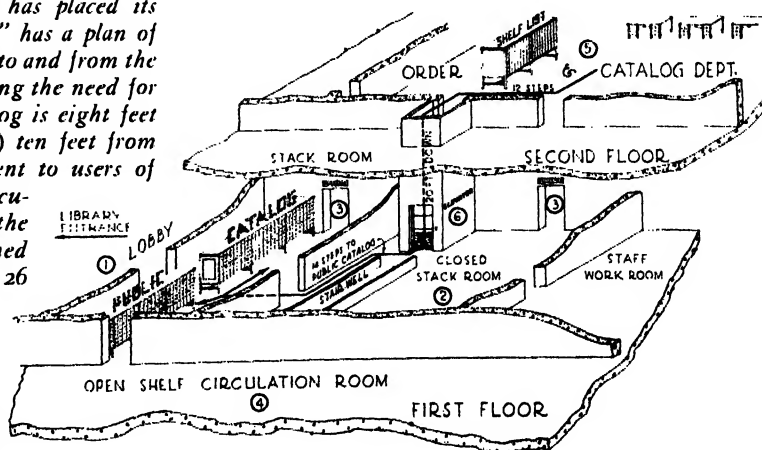
LAYOUT OF THE ORDER AND CATALOG DEPARTMENT

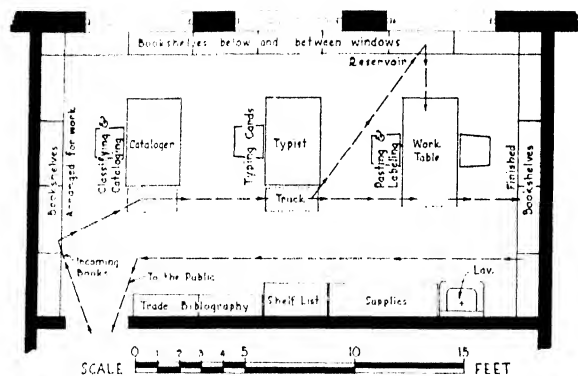
The diagrams in this chapter need to be studied in connection with the workroom diagrams in Ch. 18.

Within the catalog room many space factors are to be considered. The flow of work, or course of the books in process, so affects the layout as to make it imperative that it be studied critically before details of the room and its equipment are decided. The floor plans here show the relation between layout and the routing of work in departments of varying size. Here as elsewhere in the building flexibility should be kept in mind but while changes may be possible they may also be very costly. The following dicta are important:

1. Provide the best possible lighting, preferably a north light, because most of the work in this department is very close and exacting and

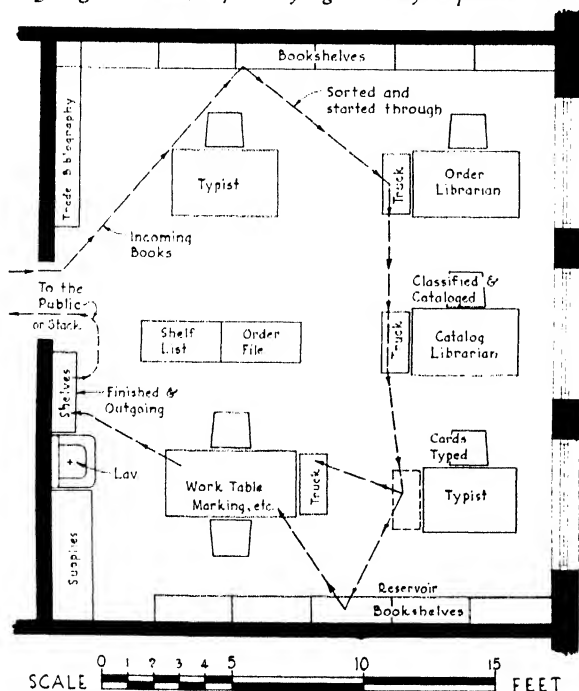
The Richmond Public Library which has placed its catalog "fifty paces from the front door" has a plan of considerable merit, for quick staff travel to and from the catalog room on the second floor obviating the need for an "Official Catalog." The public catalog is eight feet from the desk of telephone inquiry (1) ten feet from the central stack (2), equally convenient to users of either the reading room (3), or the circulation room (4), and remote only from the catalog department (5), which is reached by an elevator (6), 20 feet vertical and 26 steps horizontal distance, the complete trip, with elevator waits, in fifty seconds. In other libraries teletype and booklift are devices sometimes used for communicating quickly from one level to another. But one cannot overlook the time consumed in transmitting and copying the message, or waiting for the book list or for someone to come and take the message. These are reasons why a catalog department placed on a mezzanine is so great a time saver, if it can be managed.



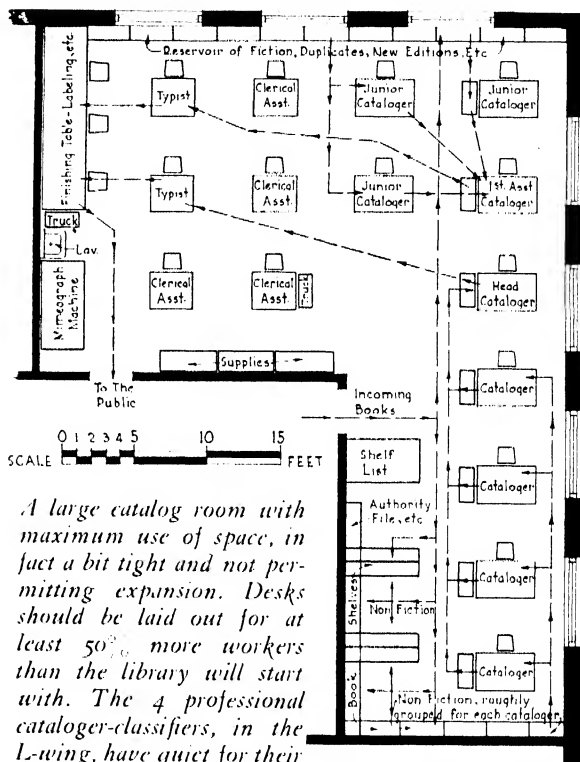


Above. A small catalog room (though one city ordered and cataloged 8000 new books a year in a room like this, an unusual load for so small a room and staff). One cataloger, one clerical assistant-typist and one part-time paster-labeler, give the desirable continuous progression of the book from the reservoir shelves behind the cataloger, to the finished-work shelves at opposite end, with no back tracking or lost motion. Extra chair for temporary or part-time worker at rush times, a provision needed in all workrooms.

Below. General workroom for all preparatory processes, assuming that order librarian and cataloger give part time to other work, e.g., book selection, reference or circulation during rush hours. Two full-time professional workers, with only 2 or 3 clerical assistants, are out of proportion, in view of the tendency to assign to skilled but not professionally trained staff as much typing, routine and mechanical work as possible. These points suggest careful study of the library's policies, methods and staff organization, before laying out any department.



causes eyestrain even under ideal conditions. Window area should be generous, artificial lighting the best. Special problems of light distribution must be solved if every desk and all the tools, catalogs and bookshelves are to be adequately lighted, for they involve both horizontal and vertical surfaces. Filing into an imperfectly lighted card catalog is torture to the eyes and an economic loss. Furthermore, it is im-



A large catalog room with maximum use of space, in fact a bit tight and not permitting expansion. Desks should be laid out for at least 50% more workers than the library will start with. The 4 professional cataloger-classifiers, in the L-wing, have quiet for their more careful work on non-fiction, supervised by the Head and first assistant who can also supervise the whole room. The 3 juniors (sub-professional) and 6 clerical-typists handle fiction, added copies and other simple work, all revised by first assistant. The L-alcove with its short double-faced cases standing out from the wall gives sufficient shelf room close to the assistants handling them; many such books have to wait for L. C. cards, special data, etc.

portant to consider the physiological and psychological factors involved.

Adequate general lighting will make the layout of the catalog department more flexible. Unless a windowless room is desired, as in the Hershey Company's office building at Hershey, Pa., the layout will always be partly controlled

by the source of natural light. For example, no desks should ever be placed so workers face windows. Light should come over left shoulders.

2. Eliminate noise. Concentration is in perpetual conflict with the noise of typewriters, movement, and discussions of technical points. Heavy linoleum for the floor, and thick acoustic tile for walls and ceilings, highly desirable.

3. Provide sufficient space near desks and catalogs and in the aisles to prevent congestion or disturbance when book trucks are pushed around. Dr. Bishop's estimated minimum of 100 square feet per cataloger³ seems generous assuming his term cataloger includes filers, typists and other clerical workers. But probable increase of the staff for twenty years must be figured, with 100 sq. ft. each for all the staff then. A new building usually means increased use, enlargement of resources, and hence a larger staff.

4. Consider the number of trucks to be used, though the 100 ft. per worker provides for them. Too few book trucks mean general overloading resulting in probable noise, undue expenditure of energy, and the necessity to plan work around equipment available for use at a given hour. An average of one small truck to each two assistants in the catalog department should be adequate if sufficient wall shelving is available, or small standing shelves next the desks.

5. Shelf every foot of wall for books in process. Although an efficient department puts its books through promptly and keeps its shelves nearly empty, an extensive gift or purchase may suddenly put the department hundreds of volumes in arrears. Shelving for books in various stages must be conveniently located for the assistants handling each phase of the work. For example, each cataloger should have a minimum of 12 to 15 feet of shelving beside her desk for her special tools and work in process. The exact amount will be affected by the method of assigning work and by the number of book trucks provided.

6. Provide a separate sound-absorbing room or soundproof enclosure for noisy machines if such are used or may later be used for reproducing catalog cards. Libraries with three or four branches or departments each having their own catalogs usually use a multigraph, card mimeograph, set-o-type, dextragraph or similar duplicating machine for this work.

7. Reduce movement in the room to the minimum by grouping interrelated work. Plan to have the books in process move as directly as possible through the various stages of preparation, preferably from accessioner to assistant ordering Library of Congress cards, to cataloger-classifier, to reviser, to typist, to typist's reviser, to pasting table, to marker, to booklift carrying the book to the shelves. Keep this order in mind in planning the room. A long and comparatively narrow room is desirable, for it gives better natural light to each worker and aids separation of various groups and types of work.

8. Reduce movement further by providing a sufficient number of telephone stations. An outside telephone is essential and should be located where it is least disturbing to the department, and yet not so private that personal calls or long conversations are encouraged. If the library has its own inside telephone system there should be several stations in a department of any considerable size, with the stations placed not more than ten or fifteen feet apart. One telephone should be located near the shelf list and convenient to an assistant competent to answer outside and general inside calls. A French style telephone with a cord long enough to reach both ends of the shelf list would be most efficient; for frequently the original question to be answered from the shelf list is followed by another requiring further consultation of the same card.

9. Include a book lift or elevator opening directly into the catalog department. If the department is fairly large two such lifts, one to bring in new shipments to the order department at one end, the other to take the books away from the catalog department to the public at the other end will avoid a circular route.

³W. W. Bishop. *Practical Handbook of Modern Library Cataloging*. 2d ed. Baltimore, Williams & Wilkins Co., 1924. p. 22.

10. Provide washbowls with hot and cold water every thirty or forty feet.

11. Plan sufficient space for the reference books essential in the department, and for their increase. The number of such tools which must be duplicated for the sole use of the catalog department will vary with the proximity of the reference department and bibliography room if there is to be one. Considerable bibliographical research is necessary in larger libraries.

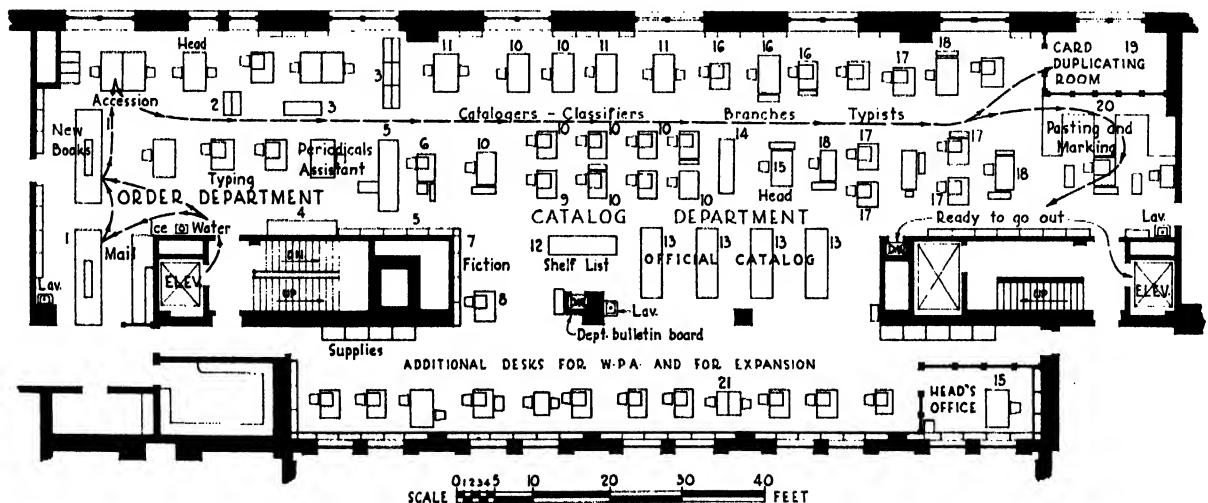
12. Provide space near the classifiers and catalogers for the shelf list and for the official catalog (if there is one) and for their expansion. To estimate the space needed for expansion several factors must be considered. Whether a large proportion of the book budget is spent for duplicate copies is determined by the size and na-

ture of the library, and especially by the number of branches. The library which believes in rigid book selection, purchases comparatively few titles, and spends a considerable part of the book budget for duplicate copies of those titles, will have a slowly expanding catalog.

The proportion of new titles to the total number of volumes added for any one library can only be estimated by a study of that library's purchases. Miss Margaret Mann⁴ has estimated that in a new public library there will be 14,300 titles to 20,000 volumes, but the current additions to large libraries may run as high as twelve or fifteen volumes per title. When the approximate number of new titles is known it

⁴*Introduction to Cataloging and the Classification of Books.* Chicago, A. L. A., 1930. p. 404.

Order and Catalog Departments, Baltimore, handling 50,000 to 60,000 accessions per annum, of which 8000-10,000 are new titles, 15,000-18,000 new central duplicates and 25,000-30,000 are duplicates for 27 branches. With 6400 sq. ft. and 66 work seats this practically meets the old formula: 100 sq. ft. per worker. Only 40 library employees to date, now being decreased with provision for emergency workers and expansion. Books progress in straight line from left to right, with distinction made between professional, sub-professional and clerical work. Each cataloger-classifier handles certain subjects. Key: Official catalog and shelf list in center. (1) Shelves and 36" tables for incoming books, (2) Order files, (3) U. S. Catalog and other trade bibliography, (4) Accession records, (5) New Titles as brought to catalog department, (6) L. C. card ordering and handling, (7) Shelves for fiction, added copies and added volumes as brought to department, (8) Assistant cataloging fiction, (9) Assistant adding volumes and duplicate copies, (10) Catalogers and classifiers, (11) Revisers, (12) Shelf list and branch union file, (13) Official catalog, (14) Reference tools; outside and inside telephones on top of case, (15) Head cataloger, (16) Branch catalog assistants, (17) Typists, (18) Revisers of typists' work, (19) Sound-proof mimeograph and multigraph room for duplicating branch cards, (20) Pasting, perforating and lettering, (21) Electric erasers.



is a simple matter to estimate the growth of the catalog by multiplying it by four (the average number of cards per title) and figuring that the standard card catalog tray holds only about 1,000 cards usably. For example, one large public library, with a system of branches, adding 23,491 volumes in 1937, found that only 3,953 were new titles. Estimating four cards per title it would require approximately twenty catalog trays to hold the 15,812 cards. From this must be subtracted the approximate number of cards for books withdrawn each year.

The shelf list ordinarily expands at the rate of only one card for each new title received.

13. If the library has a Library of Congress depository catalog (only a few of the largest libraries do), provide space for it in or near the catalog department. Libraries accepting depository catalogs agree to have them available to readers whenever the library is open, even if the catalog department is closed. If there is to be a bibliography room the depository catalog belongs there, but the question of its rapid expansion makes this a special problem.

14. Provide generous enclosed cupboards for supplies close to each group.

15. Plan the layout of furniture, bookshelving, and catalog cases so they do not interfere with fairly complete oversight of the room. Consider the desirability of an office for the head of the department, but avoid any enclosure.

16. It has too infrequently been recognized when building plans were being drawn that as the library grows this department necessarily increases in size and complexity. Consequently efficient planning looks to the future size and character of the catalog and of the catalog department, and if the bookstock is estimated to double in twenty years the staff must also double. A rough estimate of the probable size of the catalog department can be made from the following table which shows the population per cataloger, the number of volumes added per cataloger, and the expenditure for books per cataloger in public libraries in the United States. By "cataloger" is meant professional or trained

cataloger. Figures are medians from statistics reported in *A.L.A. Bulletin*, April, 1940, and represent 50 libraries in Group A, 45 in Group B, 56 in Group C, and 42 in Group D. The figures are misleading because small libraries often have no trained or separate cataloger; therefore the total personnel involved in cataloging is not truly reported. However, we find no other valid figures or estimates.

CATALOGERS PER CAPITA, ETC.

POPULATION	POPULATION PER CATALOGER	VOLUMES ADDED ANNUALLY PER CATALOGER	ANNUAL EXPENDITURE FOR BOOKS PER CATALOGER
A. Cities of over 200,000 . . .	69,572	6,372	\$7,009
B. " " 100,000-200,000 . . .	63,706	5,117	5,327
C. " " 35,000-100,000 . . .	28,906	3,038	3,655
D. " " 10,000-35,000 . . .	8,873	1,121	1,418

It is generally conceded that the cost of cataloging a book increases with the size of the library. That statement is correct as to individual new titles. But it is contrary to the evidence produced by this table, because large libraries buy many copies of certain popular books, thus reducing the average cost-per-volume on the year's purchases. These additional copies have little effect on the number of trained catalogers required, because adding duplicates is largely a clerical process. It shows, however, the need for a larger proportion of clerical workers in a large library. The exact proportion depends on the definition and separation of professional and clerical activities. Where work is carefully separated two clerical assistants may be needed for every cataloger. Since this relation of workers exists in all catalog departments, there is a possibility of estimating the number of catalogers necessary by a comparative study of volumes added and expenditures for books.

EQUIPMENT FOR ORDER AND CATALOG DEPARTMENTS

1. Shelving for every available foot of wall space.
2. Shelving reserved for publishers' catalogs and

other trade bibliography necessary for verifying the items mentioned in No. 2 of the activities schedule above.

3. A "stand-up" consulting table where these heavy books may be consulted conveniently to save staff time and preserve the volumes.

4. A vertical correspondence file case.

5. Card cabinet for the order department's file of outstanding orders.

6. Convenient housing for the accession books or cards, whichever are used.

7. Large sorting table preferably 36" to 42" high for stand-up work (with drawers for book-cards, etc.), for receiving and checking new books.

8. Card cases for official catalog, if any, and for shelf list; steel cases preferred.

9. One flat-top desk for each professional assist-

ant (catalogers and classifiers) estimating full and part-time staff twenty years hence. About one fifth as many order department staff as catalog staff.

10. Two typewriter desks (with typewriters) for each flat-top regular desk.

11. Chairs for each, preferably posture chairs.

12. One book truck for each two assistants.

13. Card mimeograph or other equipment for reproducing cards; preferably in a sound-absorbent enclosure.

14. One electric eraser for each three or four full-time card typists.

15. Work tables, linoleum covered, for pasting, labeling and other work to finally prepare the books for the shelves. About one sixth of catalog department staff for this finishing work.

16. Generous supply cupboards.



Circulation Room, Brooklyn Public Library. Entrance between service desks at the left; all other doorways lead to reading rooms. Catalog cases central to all departments; consulting shelves at ends of high-based cases. Balcony over catalog serves as approach to a similar range of reading rooms on second story. Natural light through clerestory of structural glass; artificial light projected through small openings in ceiling. Alfred Morton Githens and Francis Keally, architects. 1940. Photo by S. H. Gottscho.

CHAPTER 18: OFFICES AND WORKROOMS; THEIR LOCATION AND EQUIPMENT

BY OFFICES we refer to trustees', librarian's and the administrative offices; by workrooms, to all those spaces where the library staff carries on its routine, other than directly at the public service desks. The extent and variety of this necessary routine is far beyond what a layman would imagine. In larger libraries the workrooms include:

Order and catalog rooms for cataloging and classifying new books as discussed in the preceding chapter.

Circulation workrooms for handling all the details enumerated in Ch. 13.

Reference workrooms, as discussed in Ch. 14.

Similar workrooms for various special departments, *e.g.*, children's, periodicals, documents, etc., according to the size and organization of the library. Size and organization vary so considerably that it is difficult to define a workroom exactly, in contrast to an office or an unenclosed work space.

Binding or mending room, for the repair and upkeep of bookstock, as discussed in Ch. 20.

That there is practically nothing in print¹ on this important topic, which affects the daily work of many thousands of library employees, their comfort and convenience and the efficiency of their service to the public is typical of the lack of attention given them in almost all library buildings. Yet the activities of the library staff and its services to the public have been increasing at a rapid rate,² and efficient work quarters mean a large saving of taxpayers' money. Certainly staff workrooms and facilities have been woefully neglected.

¹*Lib. Jour.*, Aug. 1934, v. 59:594-97.

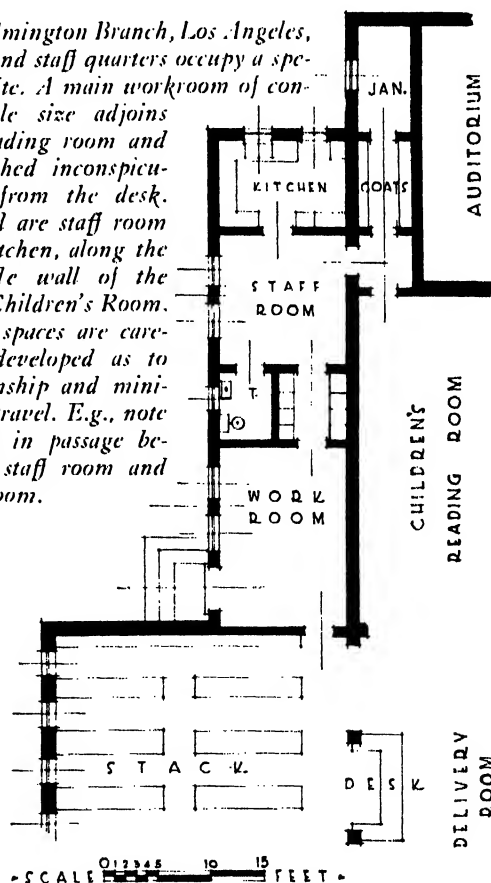
²Perhaps twice as fast, for example, as the increase in space required for bookstock, if a careful study of fifteen years of expanding space at Newark has any value. See *The Library* (Newark library bulletin), August 1936, p. 77-78.

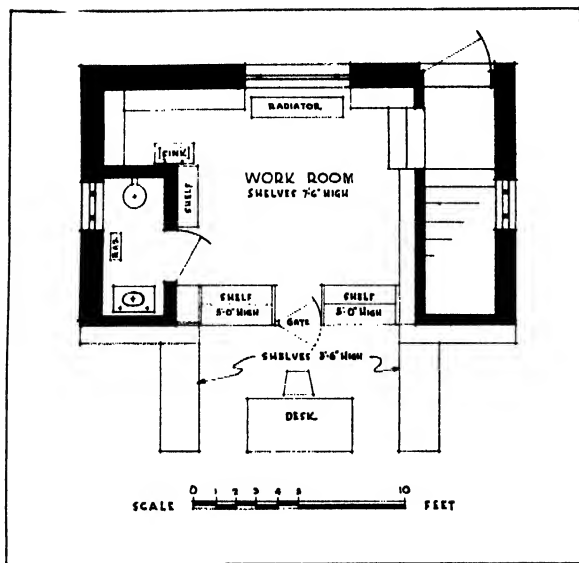
³For examples see the booklets of branch plans listed in Ch. 36, and the plans in Ch. 23-27 of branches at Cleveland, Detroit and Los Angeles, especially.

Data resulting from the authors' own questionnaire are meagre, but prove few buildings to be properly provided with adequate work spaces, well located or well equipped. This is particularly true in small-town libraries. The best examples are branch libraries in a few large cities where trained supervisors of experience and initiative have really considered the needs and planned effectively.³ Elsewhere the proper location of each part of the work and its proximities to other parts, as saving or wasteful of time, have been almost entirely overlooked.

The whole matter demands comprehensive study beyond anything yet attempted. The librarian should call on every staff member to help

At Wilmington Branch, Los Angeles, work and staff quarters occupy a special suite. A main workroom of considerable size adjoins the reading room and is reached inconspicuously from the desk. Beyond are staff room and kitchen, along the outside wall of the large Children's Room. Work spaces are carefully developed as to relationship and minimum travel. E.g., note lockers in passage between staff room and workroom.





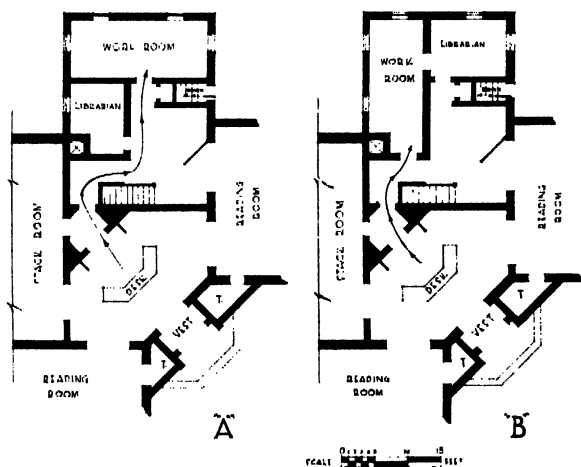
Paxton, Mass., population 700, is possibly the smallest library to project a low-ceilinged workroom behind the main rectangular building (for plan see Ch. 23). The view is screened by a gate and a double-faced bookcase 5 feet high. It is unfortunate that the toilet room had to be here.

in planning the location, arrangement and equipment of staff workrooms.

GENERAL REQUIREMENTS

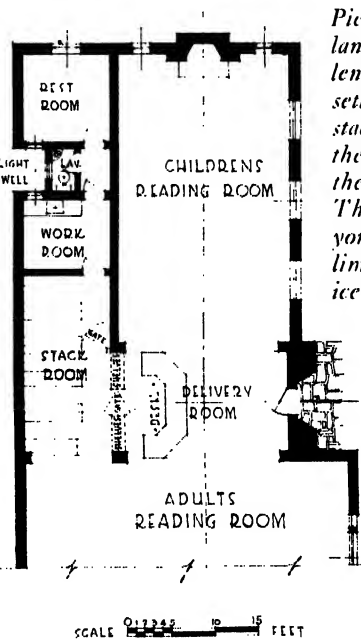
These are the basic principles for all public de-

In a recent western library the workroom (A) occupies a fine wing-end space with windows on three sides. There are more trips to a staff workroom than to the librarian's office and the two rooms could have been exchanged to advantage, as in (B).



partment workrooms (circulation, reference, and children's). They should be:

1. Close to public service desk (whether one refers to the circulation desk and general workroom in the small building, or the departmental desk and workroom in the large building).
2. Adequate in size after the proper furniture has been installed.
3. Properly equipped—work tables, typewriter or flat desks, cupboards, wash-bowl.
4. Evenly heated and well lighted, generous windows, no one sitting close to a radiator or register nor subjected to drafts from an outside door opening into the room. The last three are of course equally true for other workrooms.



Piedmont Branch, Oakland, has a partition lengthwise of one wing, setting off a 9 by 20 ft. stack room, guarded by the desk but accessible to the adult reading room. The workroom is beyond the stack, and with limited space in the service desk and no closed shelving at hand for the inevitable "snags," repairs, reserves, etc., the staff must do considerable running back and forth in this attractive and otherwise effective building. "If re-planning we would combine workroom and staff room."

SIZE OF WORKROOMS

Theoretically staff work space is based on number of workers. We refer to Tables 11, 12 in Ch. 4 for the size of the staff relative to the population,⁴ and for apportioning the workers among major departments. Some authorities⁵ call for 100 sq. ft. per worker. But a National Office Ratios Survey in 1930 showed how wasteful of

⁴See statistical tables in *A. L. A. Bul.*, 33:279-97. April, 1939.

⁵P. J. Turner. *Library Buildings, their Planning and Equipment*. 1929. 43p. p. 25. McGill Univ. Montreal. See also various books on office management; e.g., Leffingwell.

space many business offices are and set 50 to 60 sq. ft. as a sufficient standard, allowing for desks, files, reception room space, etc.⁶ While certain library departments must handle and spread out a large amount of material, 75 sq. ft. per worker appears a fair figure, except in concentrated workrooms forming part of reading-room space, or adjoining such public rooms, *e.g.*, subject departments, where all space is at a premium. Here 50 sq. ft. including desks, chairs, and wall shelving is the very minimum.

The total number of regular staff assistants is not the sole basis for calculating workroom space. Part-time workers for rush hours increase the space required at public service desks, and circulation desks in particular have to provide for maximum crowds and the total personnel to handle them. Within the workroom, con-

⁶*System* magazine, Apr. 1930, p. 311-13.

versely, the entire staff will seldom be at work at one time; some will be manning the service desks, or, in quiet hours, will be slipping, counting circulation, etc. Or the librarian may be the cataloger, in which case she should have two desks, each located with the equipment for the two types of work, and she should change from one point to the other; or the librarian or cataloger may be the reference librarian during the busy hours, etc., so the number of desks and proportionate work space may well be greater than the number of workers. Anything below 75 sq. ft. per worker when all the workers are at their posts at one time is too crowded, and permits no expansion.

Another point: the staff is likely to increase more in proportion than either stock, circulation or readers. It is not only a natural tendency, but libraries as a rule are sorely understaffed.

Workroom at Westmount, Quebec, has a 36" high work counter with high stools and plenty of day and night light. Efficient lighting directly over work counter. The radiators so close make a temperature problem, and should be shielded. If desired, outlet grilles could have been in the window sills, discharging up. A compact, convenient arrangement, with different table heights provided. Note ledge under window, and footrail. Facing the windows is hard on workers' eyes and is not recommended, even though, as here, Venetian blinds and the trees reduce the glare.





Circulation desk, with workroom immediately behind it in the stack wing at Roselle, N. J. Note clerestory lighting above the low flat roof of the stack, also valance and draw-curtains at opening to workroom. Other Roselle views in Chs. 15 and 24. Alfred Morton Githens, architect. 1937.

Readers constantly require more service. In twenty years the staff will almost certainly be doubled.

The size of the general workroom in a small library, or the circulation workroom in a large library, is influenced not only by the proportion and types of work to be retained at the circulation desk, but by the size of the working space behind or within the desk and by distance to the workroom; for the staff assistants will doubtless attempt to keep as much of the work as possible at the desk, even bringing work from a workroom at some distance in order to handle it where they can be within call for public service. At Bloomfield, N. J., the typewriters are on wheel tables to be moved around as the work requires.

E. L. Tilton⁷ estimated that for a library of 22,500 sq. ft. combined floor area there should be allotted for three related items:

Charging and delivery	1,000 sq. ft.
Catalog, workrooms and toilets	2,750 sq. ft.
Librarian and staff rooms	2,000 sq. ft.
	5,750 sq. ft.

His figures should be compared with the estimates of John A. Lowe.⁸

Total usable building area	2,000 sq. ft.
Delivery room	225-275 sq. ft.
Office and workroom	175-200 sq. ft.

But the content is slightly different from Mr. Tilton's item 3; it does not include all the work space, e.g., mending may be done in the basement; further, the delivery room is a public room; it includes only a little staff work space behind the counter. Fifteen to 18 per cent of the total usable floor area of the building is a fair proportion to be allotted to work spaces and offices.

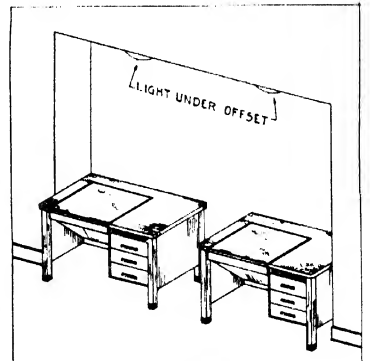
THE GENERAL WORKROOM, PRINCIPALLY FOR CIRCULATION

It would seem desirable in the study of workrooms to start with the smallest buildings and progress toward the largest. However, the topics which must be considered cut across such size-

⁷See "Library planning," *Arch. Forum*, 47:498, Dec., 1927.

⁸"The public library building plan," *Arch. Forum*, 40:3, Jan., 1924.

To gain workroom space a wall between structural posts may possibly be recessed as much as 12 to 16" with special lighting at left wall or ceiling of recess to diffuse light properly over the desks. Desks could be set at right angles with two recessed ceiling lights.



grouping. It is safe to say that economy and efficiency will be served by clinging to the simplest arrangement until the more complicated is clearly indicated. Some differences will be noted between central and branch buildings because at branches general administration and book preparatory work are reduced by centralizing them at the main building; *e.g.*, few branches have any catalog workroom. The possibility of mezzanine space, discussed later, has a vital bearing on the matter.

The small library lending less than 150,000 books a year, where one to seven or eight staff assistants handle all the work on the main floor, concentrates it as much as possible in a work space close to the circulation desk. In the smallest one-room libraries the space behind the desk is general work space. When enclosed, either by bookcases or walls, it becomes an annex or appendage to the desk. This is an ideal arrangement for timesaving. The desk with its workroom behind it may be turned around and backed up to the entrance, or may be turned halfway with its side toward the entrance. Thus there are three common positions:

1. Facing the entrance
2. Reversed and backed up to it
3. Beside and flanking it

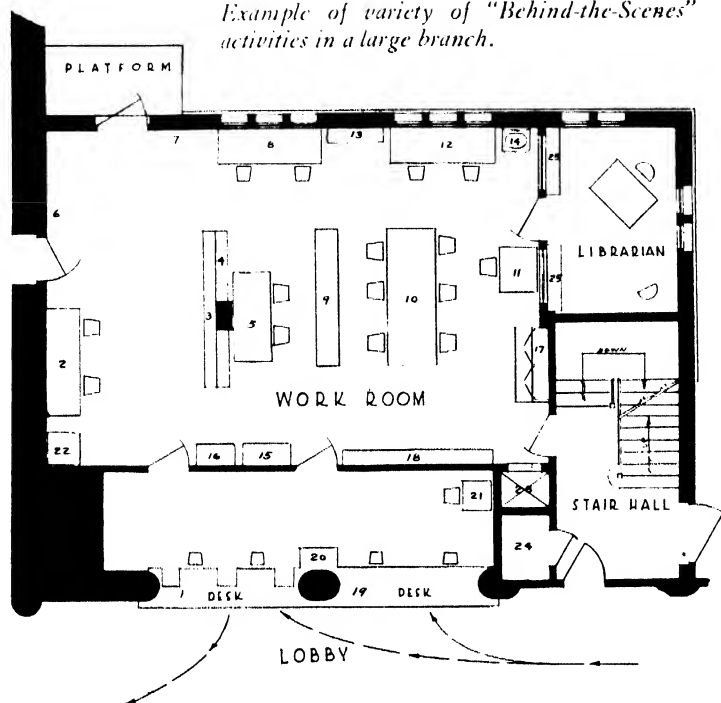
Diagrams of these three methods appear in this chapter, in Ch. 13, and repeatedly occur in the series of plans in Ch. 23 *et seq.* Many small library plans separate desk and workroom, moving the workroom to a rear corner of the main floor. Advantages: the paraphernalia of the staff is out of sight, staff interruptions are reduced, daylighting may be better. Disadvantages: increased travel required for the innumerable trips from one point to the other; out of sight is out of mind, and a highly important element may be sacrificed when the staff retreats from the public it is paid to serve.

This matter of isolation cannot have too much study. While much is to be said for concentration and against the interruptions which harass a hard-working staff, the comments in this chapter are based on the belief that service and attention to the public come before staff comfort. In some libraries the librarian with an office of his own, the assistants with a separated workroom of their own, all conscientious and com-

Waban Branch, Newton, Mass., frankly reveals the librarian's room behind the loan desk, but through a screen so that desk work is hardly noticed. Note the sense of openness and freedom. Densmore, Le Clear and Robbins, architects. 1930.



Example of variety of "Behind-the-Scenes" activities in a large branch.



Francis Parkman Branch, Detroit. Circulation and Preparation Workroom Layout. Arranged according to sequence of work, as scheduled. This may also be used as a checklist of work elements and equipment. Note: Charging by the "Detroit" system, as explained in Ch. 13, is done at the exits, the charge having been "written up" by the borrower before checking out.

While the public service desk has little direct daylight, the long worktables in the adjoining room are at right angles to, and well lighted by, the rear windows.

Types of Work Handled:

Returned Books

1. "Return desk"
2. Slipping cases
3. Sorting shelves
4. Shelves for books to bindery or discard
5. Work table

Processing for New Books*

6. Space for outgoing shipments
7. Space for incoming shipments
8. Counter for distributing incoming shipments
9. Shelves for new books and books in process
10. Work table
11. Typewriter
12. Counter for pasting and miscellaneous work
13. Shelves for books with pockets pasted
14. Sink
15. Shelf list—handy to those working either on additions or discards

Miscellaneous

16. Case of drawers for storage of individual work
17. Supplies cabinet, with large drawers

Registration

18. Shelves for reserved books, interloans, etc.
19. Registration desk
20. Registration records
21. Noiseless typewriter on movable stand, for typing registration, overdues, etc.

Miscellaneous

22. Telephone table—Incoming calls switched by person slipping books
23. Book lift
24. Public telephone booth
25. Low book shelves—glass partition above

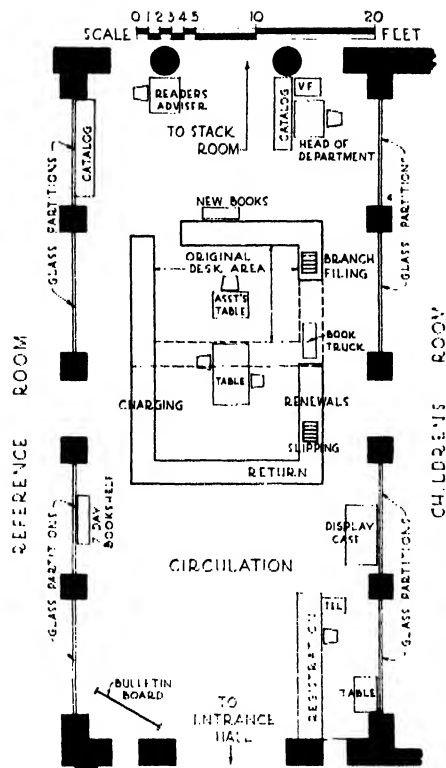
*In most cities new books are cataloged, shelved and listed at central for branches, but branches must file cards.

petent, are tempted to consider their own comfort too seriously, forgetting they are not employed to work in a delightful seclusion, but to be attentive, hour after hour, to the needs of the readers. Efficiency and economy demand keeping together all the work which will occupy the same workers throughout the day. We point out again the incessant change, especially by the circulation and reference staffs, from attending to readers and borrowers, to the behind-the-scenes paper work that is always waiting. Newton's Waban Branch and Detroit's Parkman Branch are arranged in accordance with this requirement on a small and large scale respectively. The workroom lies directly behind the public service desk, which, at Parkman, is somewhat screened along the rear wall. The workroom, lengthwise of the building, has

plenty of window space even with the librarian's office occupying one corner. In quiet hours the assistants have uninterrupted work periods, but oversee the desk and can step out instantly to wait on readers. See accompanying diagram.

This theory of plan was defended in a useful article by Ralph Ulveling.⁹ He maintained that the workroom: (1) Be located directly behind the circulation desk and separated from it by a ceiling-high partition having one or two doors for access to the workroom. Such a plan will expedite the movement of books to the workroom for slipping and will save both time and energy normally expended on the frequent miscellaneous trips back and forth. The view of Waban Branch raises the question: Is the usual

⁹"Staff workrooms and working space, their location and arrangement." *Lib. Jour.* 59:594-97, Aug. 1934.

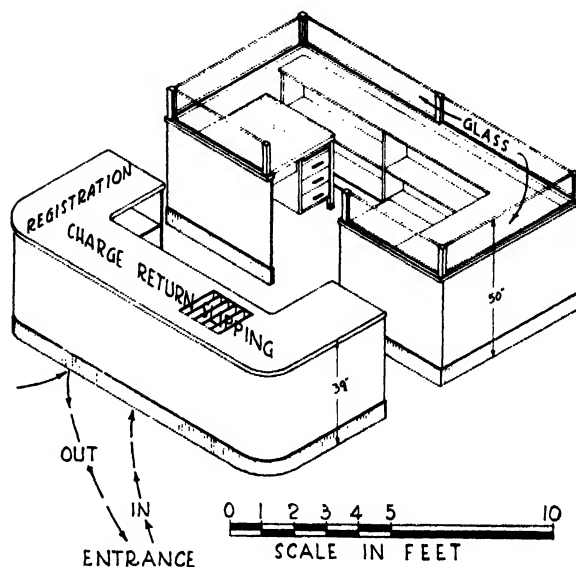


Youngstown's efficient building of 1909 still retains all its circulation routines in the large central hall. The rectangular desk, 12' wide, originally 8' deep (see dotted line), was enlarged in 1937 for the fourth time, to 18' deep all inside measurements. The registration had already been placed near the front entrance in 1929, and the department head given a separate screened desk. There is no separate circulation workroom, though the central circulation is 208,304, and total for the system is 738,769 per year (1938). Charging, discharging, counting and filing book cards, slipping, revising, renewals, overdues, filing of 7-day fiction, transferring 7- to 14-day, charging and assembling books for branches, branch charge filing, light mending and statistics are all handled here, "quietly and smoothly, with fewer people, the assistants quickly changing from one point to another. We never felt it any drawback that the public sees the girls at work at all activities."

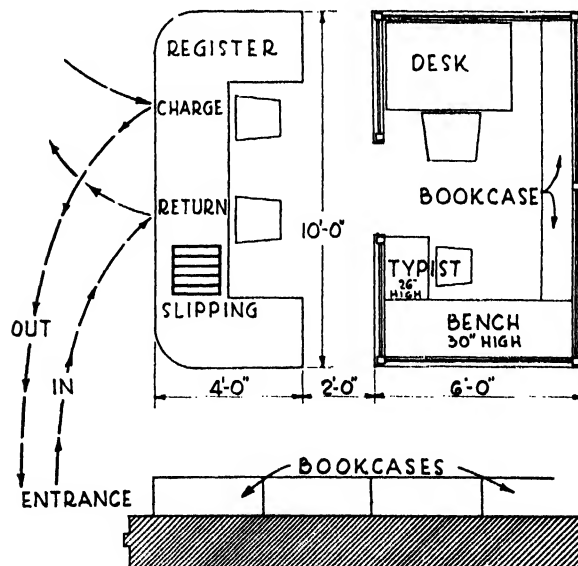
solid partition to ceiling height advisable? (2) Have outside light. (Clerestory lighting toward north or east is excellent; skylighting is effective.) (3) Have direct access to the public book rooms. (4) Be so located as to make possible the delivery of new books from shipping rooms without passing through public service areas. In large buildings this is usually accomplished by

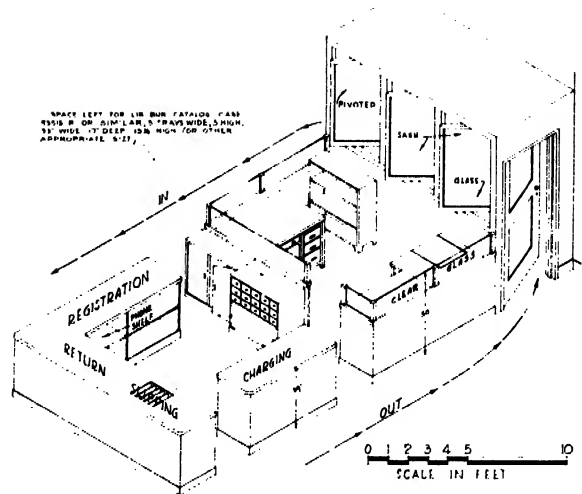
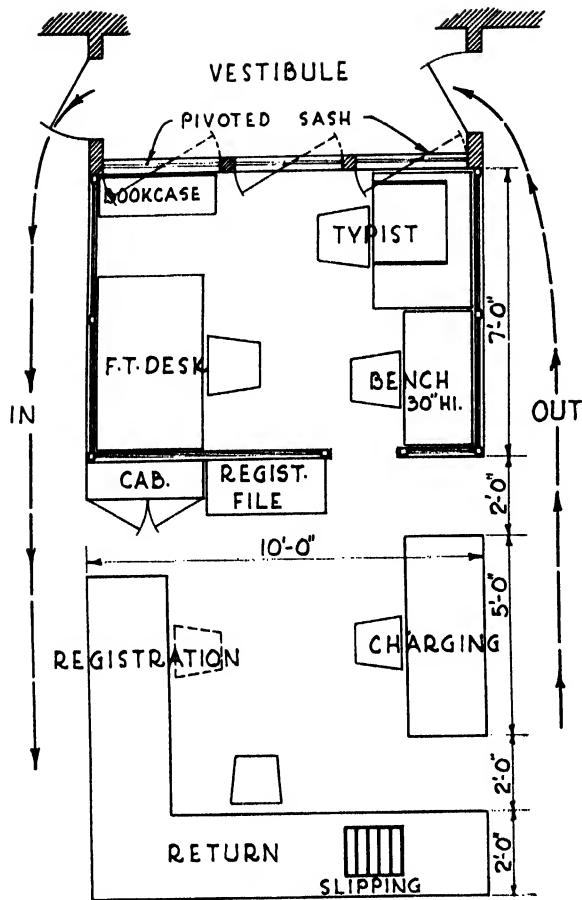
means of a book lift. (5) Be so arranged that it will be in close proximity to the office of the librarian, which office should in turn be easily accessible to the public rooms.

He also makes five useful comments on ar-



Two-person desk and screened branch-work-space unit, total 10 x 12 ft. at right of entrance, where a wall-enclosed workroom would be too conspicuous or expensive. Quick change between public and "behind the scenes" details is provided for at the four work spaces. The arrows indicate the traffic cross stream at any desk that stands at right or left of an entrance. In a small branch this is not serious, if the desk is 8 or 10 ft. back from the door.





Combination public-service desk and low-screened work area; in reality one large work area 10' x 18' containing provision for all circulation routines, magazines checking and gathering, mending, statistics, typing, librarian. A maximum of 8 places of which only 3 or 4 may be in operation at one time, depending on peak hours at public counters and quiet morning paper work. To all this would be added a reference desk, if possible to provide a trained person for rush hours, a clerical assistant taking over the charging or slipping. Could handle up to 125,000 or 150,000 circulation. While satisfactory for not over 5 or 6 workers at one time at a branch, it would not suffice for a main library; the librarian would need a larger and less public room for interviews and administrative work, while the cataloging and classifying would require special space, as shown elsewhere in Chs. 17 and 18.

rangement (referring especially to circulation department):

(6) Work should be so arranged that it will proceed along a line, moving from left to right, thus avoiding the need for extra move to the next worker. (7) Slipping cases should be placed, if possible, between the door coming from the circulation desk and that leading to one of the open-shelf rooms. (8) Supply cupboards should be at the center of one of the longest walls instead of at the end or in one corner of the room. (9) The telephone should not be in this room, and the staff toilet should not be connected with the room. (Another circulation head, however, points out that telephones for renewals, reserves, overdue, etc., really must be in the circulation workroom, or excessive waste of time will result.) (10) Workers should never face windows.

Youngstown (diagram on p. 169), where the loan desk in the public circulation room has been enlarged four times, affords a good example of the possibility and economy of keeping practically all the circulation work inside the circulation desk enclosure. There is no separate workroom for the circulation staff. The same workers serve the public during busy hours; all members of the circulation staff can transfer easily from public to paper work and back again. But all its varied clerical work is directly under public gaze.

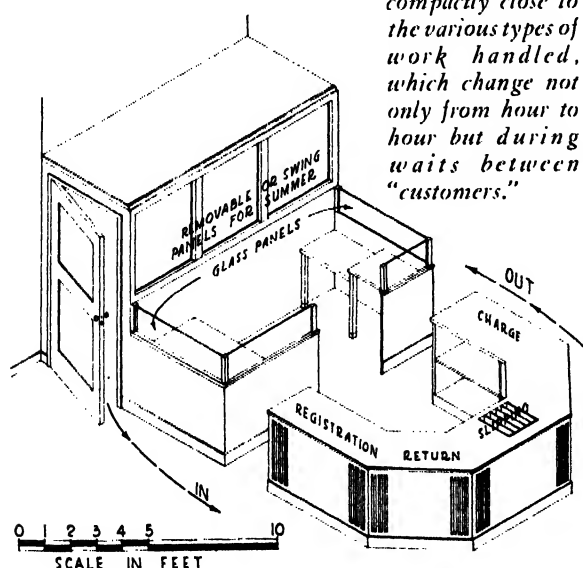
A similar system has been used in many branches lending over 100,000 books per annum, an "Island Desk" enclosing sufficient space (perhaps 8' x 10' inside) to handle practically all

the work, except magazine files and books being made ready for bindery. (See Ch. 34 for remodelled Hampden Branch.) But in a larger library the increasing bulk of work and the piles of returned books waiting to be discharged, or slipped, compel the removal of part of the circulation work to a space behind the scenes. Just when? A matter of efficiency *vs.* appearance.

Few experiments have been made to design a circulation desk enclosure and its equipment with typewriting and other work desk or counter at the rear of the enclosure, screened from public view to permit handling a variety of paper work and materials, so that it will appear presentable under the scrutiny of the many readers who congregate at the circulation desk. Such a screen may be of obscured glass, but should not extend over 40" from the floor. See view of Cleveland Branch desk, in Ch. 42.

We give here three drawings of possible reversed desks with screened work enclosures, assuming that the enclosures will be provided with heavy carpets and noiseless typewriters, and that the workers will speak quietly when readers are about.

Small reversed circulation desk, for central or branch handling up to 75,000 circulation, with screened staff desk and work bench behind, somewhat hiding staff paper work, typing, etc., but keeping the 2, 3 or 4 workers compactly close to the various types of work handled, which change not only from hour to hour but during waits between "customers."

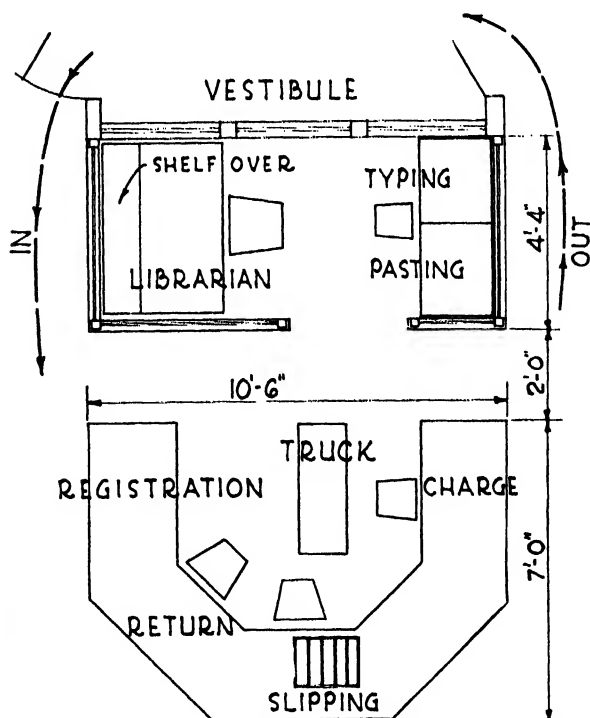


The further development of these takes the form of the reversed desk and workroom combined, as shown in the Smith Hill, South and Walbrook Branches in the series of six diagrams herewith.

A workroom backed against the entrance is highly efficient but may be overdone, especially at a central library, if an attempt is made to handle in it cataloguing, shelf-listing and other processes that can go on in quiet morning hours in a more remote workroom. It is better to have such a separate workroom if more than three or four assistants are involved. The real purpose of the reversed desk-workroom is to keep together work that goes on constantly, in which much time would otherwise be lost by changing from one activity to another; and to have the staff closely supervise the readers. This question depends, therefore, on an analysis of the work in the given building.

SPLIT-UP OF THE WORK

These attempts to keep all circulation work together in one general enclosure lead to a similar effort to handle there also the typewriting, cata-

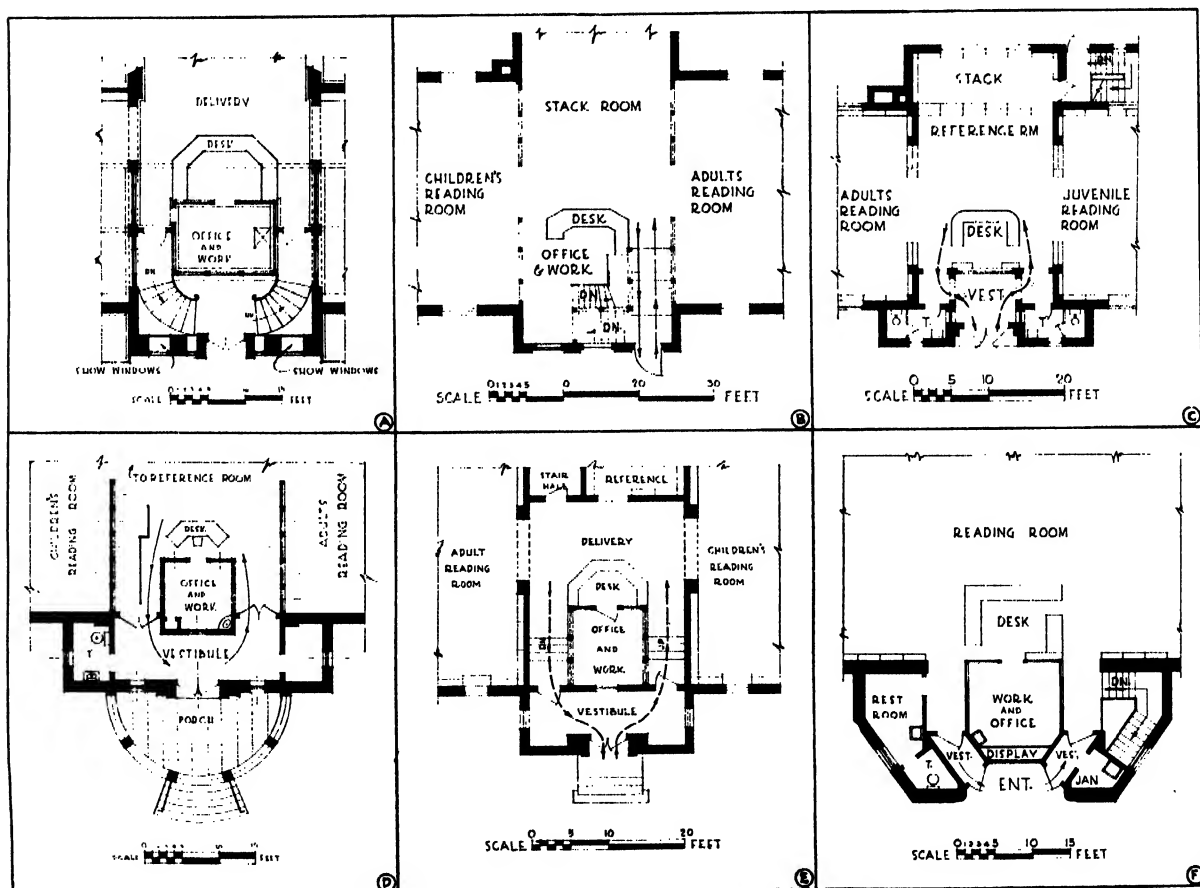


logging, mending and bindery work; in fact, all the staff non-public work. The increasing volume of such work makes it impossible to accommodate it close to the entrance and results in a separate room, probably behind the wall at

the rear of the reading room. The series of five workroom plans shows how the small general workroom develops into a larger one which soon divides into two or three areas. The increasing volume of work at a central library circulating

Six arrangements of the reversed desk-workroom. A. Smith Hill Branch, Providence, has curved inside stairs from vestibule to main-floor level, and a pair of doors half-way along the work-desk enclosure. This takes care of heavy after-school crowds. An electric lift services the book shelves and workroom in basement (if anyone is on duty there!). Reading rooms visible through glass screens. B. Bailey Branch, Gary, Ind., attempts to route both streams of traffic past one side of the desk, to give the staff more work space at the left. Note staff stairway to basement opening direct from workroom. The exit has proved difficult to control, a turnstile and rail device proving ineffective, and there is congestion and confusion at the entrance and desk during busy hours. C. At Glen Park Branch, Gary, this was corrected by using the circular route around the desk, but extra work space is in an alcove at the rear of the building 22 ft. distant.

D. Bridgeport, South Branch. The small work office at entrance is for the librarian and for shelflisting and typing, while basement workrooms accommodate mending, magazine and picture preparation, etc. Circulation routine is handled at the circulation desk itself. The assistants are assigned to either one of the three types of work and there is no running back and forth. Note the advantage of the wider entrance element with two inconspicuous anterooms. F. Weaver Memorial Library, East Providence, R. I. Large vestibule with steps inside both sets of doors. F. Walbrook branch project, Baltimore. Entrance at corner of triangular lot permitting an extension at the front and leaving the main rectangle clear for reading room. Circular ingress and egress of readers with reversed desk and generous workroom. The double door and exhibition case avoid requiring readers to face a blank wall or office screen.



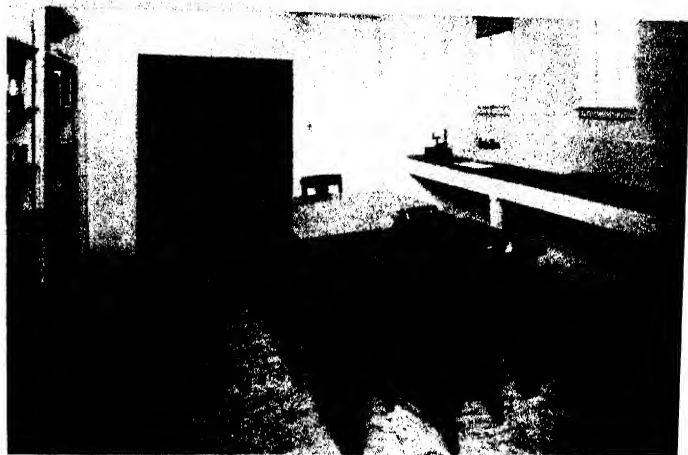
over 50,000 and at a branch lending over 100,000 involves so many persons and such a variety of materials that a split-up is in order, with the cataloging, mending and magazine preparation removed from the circulation routine.

This leaves items 4 to 7, listed below, to remain as long as possible near the circulation service desk, *because* these are daily duties connected with the flow of materials which come and go all day long, and involve the larger part of the staff. In the diagrams of split-off, nos. 8 and 9 would be forced up or down into a mezzanine workroom, along with cataloging and preparation, which preceded it. We cannot point out too clearly the advantage of such work space on a separate level just above or just below the main floor level, as the most convenient satisfactory provision.

In almost every library, work space is required for the following activities, whose combination and location must be carefully studied.

Office	1. The librarian's work (detailed under heading Librarian below).
Preparations	2. Book selection and ordering, generally a part of the librarian's work in the smaller library, but in larger libraries often combined with 3.
Catalog Room	3. Classifying, cataloging and finishing (pasting, labeling, etc.).
	4. Registration.
	5. Lending and return (detailed in Ch. 13).
Circulation Service Desk or Workroom	6. Slipping of returned books
	7. Overdues and reserves.

Located together, both 6 and 7 requiring the same files of "book cards." In large libraries placed in circulation workroom.

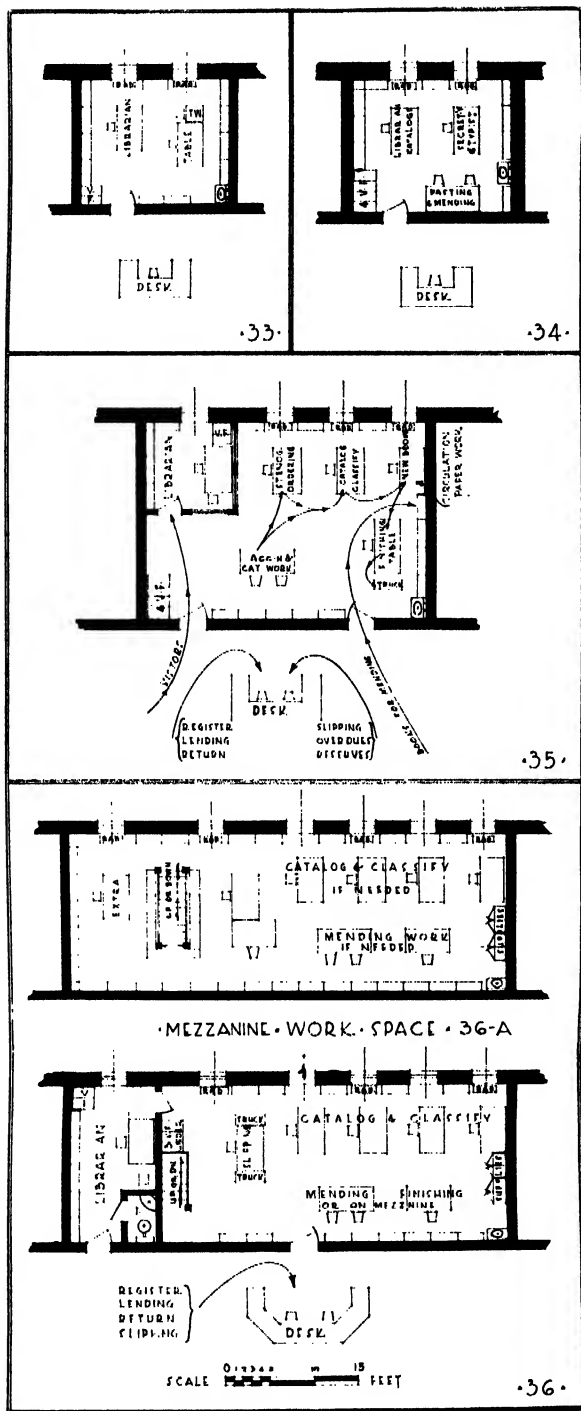


McKinley Branch, Sacramento, with workbench and sink, 36" high; 4' x 6', one half covered with zinc, for mending, two full-size drawers. Nearer half has typewriter well. Adjustable wall shelving, linoleum floor.

Most convenient Desk or Workroom	8. Periodical handling.
Secondary Workroom	9. Mending and preparing for bindery.
Reference Workroom	10. Reference work, including checking and sending for free materials, correspondence, clipping, newspapers, etc., preparing of pamphlets, clippings, pictures, maps, etc., for files.
Children's Workroom	11. Children's work.

What types of work shall be handled in an enclosed workroom out of sight of the public? "That which is noisy, such as typewriting (we do not have noiseless typewriters in branches), and the kind of work which requires a good deal of material to be spread out, such as pasting, work on bindery books, covering of magazines, etc. Also, that which requires concentration and accuracy which are not possible at the loan desk."¹⁰ This is a good general principle, but the foregoing list makes it clear that the librarian's work (1), with (2) and (3), will first be removed to another workroom for the reasons given, while (10) and (11), reference and children's work, may stay with circulation work in the general workroom or be separated, depending on whether there are separate reference and children's rooms.

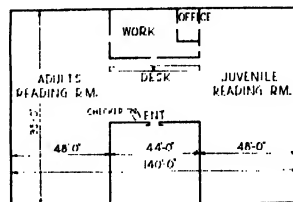
¹⁰Letter from Miss Bessie Sargeant Smith.



Increasing staff and volume of work, as distributed in five workrooms of increasing size, with all desks, chairs, and work located and routed, on one and two levels. Keeping preparatory work and mending with circulation work, or as close to the loan desk as possible, for staff concentration and time saving. 33. The small library with one or two workers can best handle every-

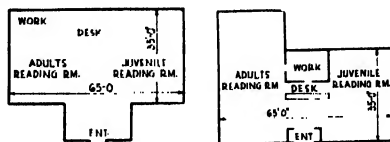
CHILDREN'S WORKROOM

The relation of this to the children's desk is the same as that of the circulation workroom to its desk, though close proximity is less important



when the department is not open all day. Ch. 16 gives details.

When the two departments are on the same floor they can share a single workroom. Ulveling's valuable article, referred to, shows how by



shifting the front projecting wing of the common T-shaped building and adding the same amount of space at one end, there may be placed at the center of activity, and opposite the entrance, a contiguous desk and workroom. Here

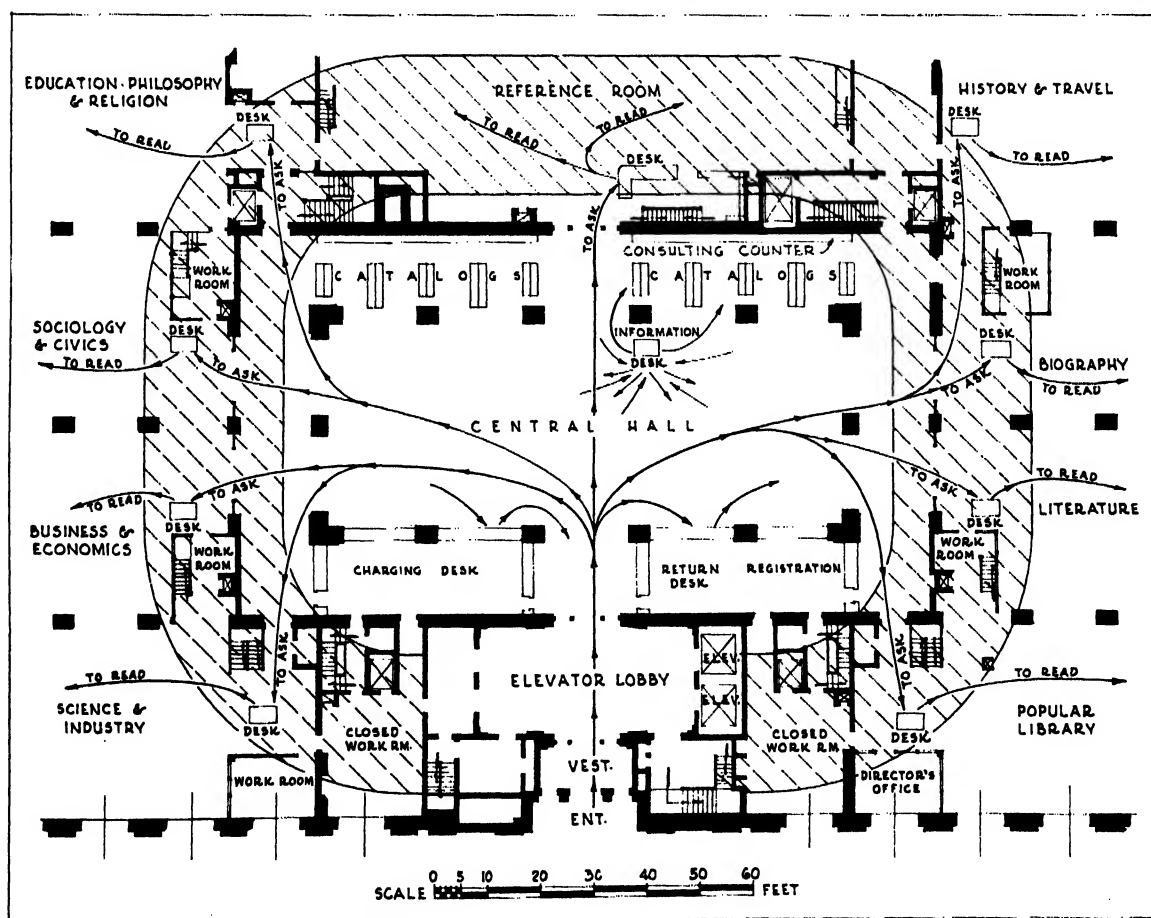
thing at the circulation desk and an enclosed workroom behind it. Slipping and reserves at the latter, with overdues and other typing, including catalog cards, mending, etc. 34. A slightly larger layout for 4 workers, the typist given a larger desk, the mending at its own table. 35. Librarian given more space; most would prefer a glass screen with door to workroom rather than solid wall. Slipping removed to main floor workroom where reserves and overdues are also written up from the files. 36. More space is also given to cataloging and finishing, to keep them on main floor, but either cataloging, finishing, mending, binding, etc., can go on the extra level, shown as an alternate. 36A. This doubles the staff space close to the focus of public service. A two-level unit of this size would take care of cataloging, preparation, circulation, mending and "bindery," for a library with 300,000 to 400,000 circulation, with reference and children's staffs elsewhere. Smaller libraries could shorten the space in proportion. Half as much more window space in proportion to wall space is needed to take care of workrooms. The cataloging provision in this series of diagrams should be studied in connection with the diagrams and text in Ch. 17 on catalog departments.

the adults' and children's work are combined in the workroom as well as at the public desk, while the two reading rooms themselves, with their respective noises, crowds and services, are somewhat separated and well supervised. For a larger library lending up to 400,000 he would have a U-shaped building with the same combined desk and workroom arrangements, and the two busy reading rooms somewhat separated, giving both a degree of quiet. There is much merit in these two examples of a combined supervisory, public service and workroom space, and they invite interesting architectural treatment.

REFERENCE WORKROOM

Reference work is separated from adult circulation some time after the children have been given separate quarters. There is a tendency to postpone separate reference department workrooms long after the reference room itself has been set off. This is perhaps unfair to the reference workers, but doubtless the reason is that their correspondence and the acquisition of special materials—pamphlets, documents, etc.—is handled in the main office unless the library is a very large one. Reference “paper work” is not given the attention and the personnel it should have in many libraries. Much of the assistant's

Departmental service-administrative zone, shown in cross hatching, on main floor at Rochester, Baltimore and Toledo. See Ch. 32 for plans. All readers cross this zone and pass one of the public service desks, which, with department workroom directly behind it, stands at the entrance to each department, close to the central hall, convenient to the readers and the “live” book collection, and, by short stairs, to the stacks below and the remainder of the bookstock.





Public-service desk and workroom, Business and Economics Dept., Rochester, N. Y. The assistant on duty meets the requests of readers, who pass on to bookcases and tables at the right. The other departmental staff is somewhat retired but available in the workroom, ready to be called out when needed. The diagonal shadow at the left is from the stair leading down into the stacks which, with the main floor open bookcases, make the entire departmental stock quickly accessible. Trough reflectors between bookcases are similar to those used in Baltimore, which, in turn, were copied from Queens Borough. Gordon and Kaelber, architects. 1936.

time is given to advance or deferred reference questions, *i.e.*, when the reader is not present, and this is most easily done in the reference

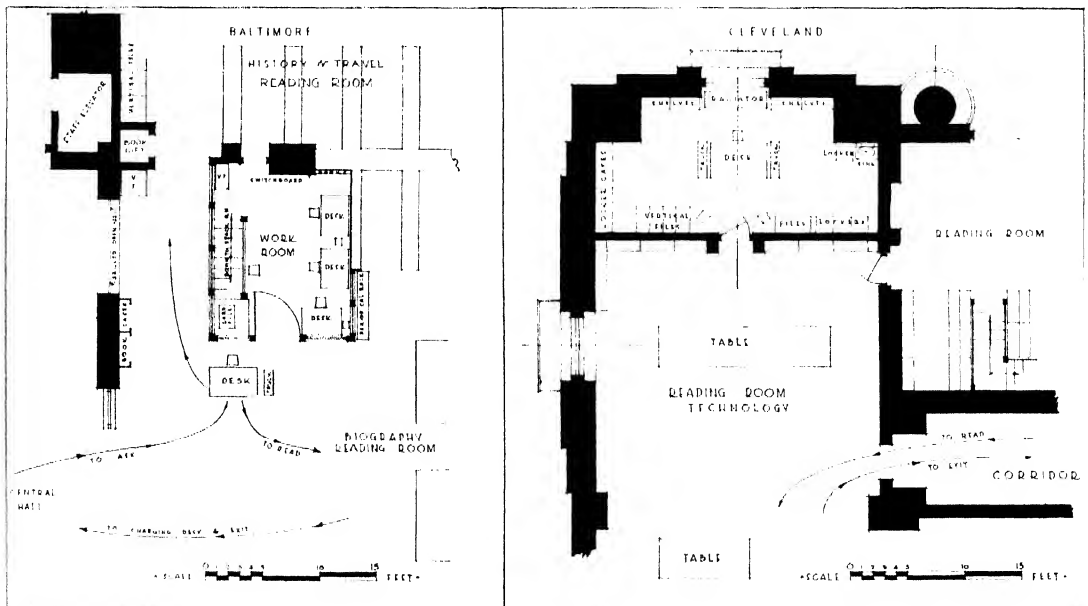
room itself, where the material is. Further suggestions on reference and subject department workrooms and their equipment are given in the next paragraph, and under heading Equipment, below, and also in Ch. 14.

SUBJECT-DEPARTMENT WORKROOMS

In larger central buildings the problem is very different; groups of specialized workers give specialized service to readers whose interests are also specialized, and whose reading rooms must be to some extent separated. Pasadena, Rochester, and Baltimore, as well as Cleveland and Los Angeles show a scattering of workrooms so that the appropriate workers may be next to their related departments. Splitting into subject departments requires a larger staff to man the public service desks than in libraries organized on the older plan with departments devoted to general circulation, reference, periodicals, etc.

But this is done with the conviction that more efficient and intelligent service can be rendered

The Cleveland subject department workrooms are placed at the ends of the reading rooms; readers enter near the center where a public desk is located. Readers enter the Baltimore reading rooms from the inner end where the public desk and workroom operate as a single unit. The Baltimore workrooms are too crowded.



by this increased number of workers whose chief function is to connect readers with the contents of the books needed. The plans of Rochester, Baltimore and Toledo show an administrative circle just outside the central hall; every reader crosses this circle and has the chance to make contact at the public service desks with the departmental staff, and make his requests for books or information. If he wishes to read quietly, he continues out to the perimeter of the building, securing near the windows as great a degree of quiet as he may wish. At Pasadena, workrooms adjoin the California room, pamphlet room, circulation desk and stacks behind it, the children's room and the intermediate room. In all these buildings the staff works under unusually convenient conditions and is more accessible to the public than in some of the older buildings. See diagram, p. 175.

Subject-departmental workrooms are often difficult to locate because the staff wishes: (a) nearness to readers who need assistance; (b) nearness to the general card catalog if the department does not have its own; (c) supervision of readers, which may require one or more assistant's desks out in the room (in large library rooms 60 to 100 ft. long these would be at some distance from the workroom and therefore wasteful of time for frequent unavoidable trips); (d) nearness to the book collection center, which may be within the room, or to the entrance to the stacks, or to the stairway to supplementary mezzanine (Cleveland). Item (d) will at least suggest the prime necessity for assembling near the workrooms all reference books constantly referred to, including recent bound periodicals.

The plan of relating public service desk and workroom so the staff can change from one to another instantly, near the public entrance to each public department, is efficient and economical. Such workrooms, directly under the public eye, have to be carefully designed for attractiveness and dignity in general impression and detailed for quiet and convenience.

Besides the diagrams shown here, which suggest general arrangement, there is detailed dis-



Periodicals form the bulk of a library's daily mail, handled quickly at a sorting and checking counter 30" high, 27" deep, linoleum top, with compartments 8" x 10" beginning 12" above the counter. Wrapping material and waste boxes below. In large libraries the magazines, after opening and arranging, would be taken on book-trucks to a visible index case for checking the daily arrivals. This counter is located in an order department, where books, pamphlets, documents, are also coming in.

cussion of these workrooms in Ch. 14 on reference and subject departments. Their equipment is covered toward the end of the present chapter.

PERIODICAL WORKROOM

Periodicals arriving need to be opened, arranged, checked off on the periodical record card file, stamped with ownership mark, and then distributed to their own display rack or shelves, or sent out to branches, for many libraries which have daily delivery to branches now centralize their periodical work. At small libraries and at branches this can be handled first thing in the morning at the circulation desk; in large libraries, in the order room or reference workroom at a large mail counter with compartments above it. The same is true of the arranging and tying up of periodicals into volume packages and making ready to send them to the bindery. Or such work can be spread out in the general workroom, but much more conveniently in a basement or mezzanine mending and binding workroom. In large libraries with a periodical reading room, there will naturally be an adjoining workroom for all this.

MENDING ROOM

Mending books and preparing them for the bindery require considerable table space and



Finishing benches, linoleum topped for pasting and marking the books after cataloging or rebinding, and making them ready for the public. Here is a three-winged counter 30" high, 30" wide; it can accommodate a worker and her materials on both sides of each wing.

shelving and are in a perpetual state of incompleteness; i.e., it is uneconomical to pick up all the work and put it away every night. Also it is work which generally may be resumed at convenience, without haste; the mending work and materials therefore require 100 sq. ft. per worker, and for lack of main floor space it may be relegated to a secondary workroom, basement or mezzanine. York plan in Ch. 8. See Ch. 20 for other details of mending rooms.

OFFICES AND ADMINISTRATION

Library trustees give fully of their time and deserve recognition in the form of an attractive room for their deliberations. But building and maintenance cost for an elaborate room kept for monthly meetings is so high that in most libraries the trustees and librarian share the same room, properly furnished and kept free from some of the papers and other materials that seem to gravitate toward the office. In several cases the librarian has an adjoining routine workroom and retreat from too many visitors. At Los Angeles the trustees make their room available for small meetings of department heads and of neighboring librarians for discussions. In Brooklyn it is also the rare book, or treasure, reading room. It is only fair to design and furnish the trustees' room as attractively as any in the building, but it should be on an upper floor or mezzanine where public space is not at a premium.

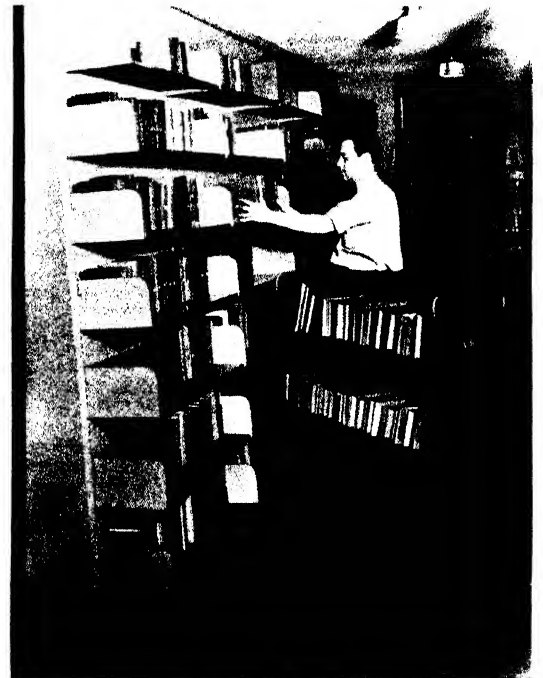
LIBRARIAN'S OFFICE

In very small libraries or branches, added expense for construction and loss of valuable main

floor space challenge the idea of a librarian's office distinct from the workroom.

In central libraries of cities of 40,000 or 50,000 upward, the librarian needs a small private office because of the increasing number of semiconfidential interviews. In cities up to 150,000 or 200,000 this office should be placed close to the staff workroom and public departments, because the librarian gives much of his time to their supervision. In general he will seek a location away from the public front entrance, because of the exasperating procession of visitors who insist on seeing him. A first-floor location for the librarian's office may be feasible in space somewhat screened and not otherwise of value for public use.

Sorting room on mezzanine below circulation desk, where truckloads of slipped or discharged books are arranged with least handling, to go back to their respective rooms and shelves. These sloping 12" shelves permit much interpolation, without shifting many books from shelf to shelf, and the books tend to slide to the back leaving front edges clear for work space. These stack reflectors were replaced by indirect fixtures which diffuse the light from a white ceiling.



An examination of the plans in Ch. 23-32 shows numerous cases where, perhaps for architectural symmetry, the librarian's office is at one corner, the general workroom opposite, with the bookstack between. In general this is not a good arrangement, as the librarian and staff have to carry on so many activities together that much time is lost by separating them.

No two librarians will quite agree on the proportions of time and attention to be given by the head of a larger library to the following duties, each of which must be provided for in the plan:

- a. Quiet seclusion to think, to plan, to go over reports and memoranda from various departments and branches and make decisions thereon.
- b. Correspondence and telephone calls.
- c. Outside contacts with organizations and leaders, plus their resulting calls.
- d. Staff interviews, on personnel selection and problems.
- e. Interviews with department heads and branch librarians resulting from visits for inspection and general supervision at central and branches.
- f. Contacts with the two phases of library work which (next to the above) are the librarian's primary responsibility: Book selection and the preparatory processes; the business office with its finances, statistics and the measurement of services for the money spent.

Among large libraries Rochester has arranged this well, with the librarian's office combined with trustees' room and a librarian's workroom adjoining, as shown in plan here. Staff elevators give quick access to all public departments, but only the visitors with definite business reach the office corridor, where a secretary deflects those who can transact their business with someone else. The Indianapolis office-workroom-area plan is also interesting. See page 186.

In his office the librarian will wish the secretary's desk (unless the secretary is to be placed in a public waiting or outer room), a work table, shelving for professional literature constantly referred to, leather benches and chairs for visitors. Vertical files may be in an adjoining room, perhaps recessed in the walls. A men's washroom



Trustees' and Librarian's office, Rochester, N. Y. This room, with its marble fireplace and wainscotted walls, meets the needs of the trustees for their numerous meetings, but is used also by the librarian as a public office. His private workroom adjoins it. Gordon and Kaelber, architects. 1936.

should be provided near the trustees' room and librarian's office.

BUSINESS OFFICES

These should in general be rather near the office of the librarian or the person delegated by him to supervise the business activities of the library. Such an intermediate person would naturally be located near the librarian for frequent consultation. The business office should be equipped to handle the contemplated expansion of work for twenty years, including bookkeeping, handling of cash and statistics. It should have sound-absorbing ceiling and walls, and carpeted or rubber tile floor; with plenty of diffused ceiling light with outlets near the corners; a washbowl in the room and a toilet not far away; a spacious safe, preferably built into the wall and including not only cash drawers and boxes but as much shelving as can be managed for account books, record papers, etc.

If the business office is responsible for the distribution as well as purchase of supplies, a store-room adjoining will be most convenient, even if only part of the supplies can be kept there, possibly the stationery supplies for the library system. Connecting corridors should be sound-absorbing to reduce echoes of conversation as to business transactions, finances, salaries and pay-rolls.

SECRETARY

With a library staff of twenty-five or thirty, an office secretary is a necessity to absorb many clerical details and keep routine administrative work moving. Her desk can be in the librarian's office or close to it to save time. If separate, not much space need be set aside, but it should intervene between the librarian and the public, and still be well lighted.

Vertical files, referred to many times a day, should be placed close to the secretary or near the librarian, if there is no secretary. Office files grow at a surprising rate, even with annual weeding. Perhaps three four-drawer cases per stenographer and typist are needed.

STENOGRAPHERS AND TYPIST'S

In a large library quiet and economy result from pooling stenographic, typing, and mimeograph work for all departments that do not have full-time workers of their own, or which turn over certain jobs to the central office. Enough space should be set aside in a separate adjoining room for mimeographing, multigraphing, storage of stencils and supplies, drying racks for stencils, tables for gathering sheets and collating, shelv-

ing for paper and for finished jobs. Typists' and mimeographing rooms should have walls and ceiling lined with acoustic tile. No workroom is adequately lighted by the usual outlets down the middle of the ceiling; a line of outlets should run along the left line of the desks, with heavy wattage and fixtures that throw a diffused ceiling glow from the left of each worker, especially those in the corners of the room.

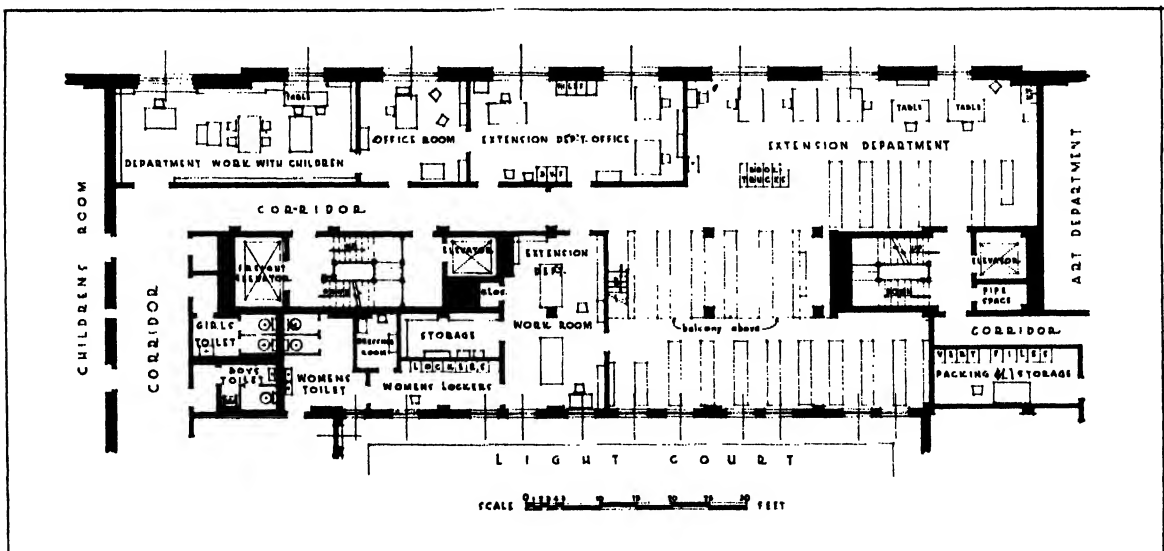
TELEPHONE

A public switchboard connecting with every department in a large library may be placed in the stenographers' room, but this is not often practical because of the confusion and loss of privacy. It may be placed independently wherever good, lighted, not too isolated space is available; but furniture should be provided for typing, etc., to fill in moments between calls, and if clerical work is to be sent back and forth it should not be too far from the staff elevator. See Ch. 37 for inside phone system, and other telephone equipment.

VAULTS AND STOREROOMS

Vaults are desirable but expensive; they can be

Rochester's supervision of branches, stations and school work is handled in its Extension Department quarters on second floor, adjoining the headquarters of Children's Work. A two-level stack accommodates a large fluid book collection for this city-wide service.

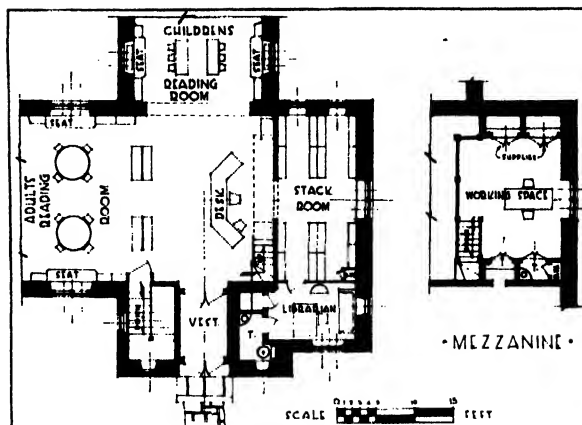


built in on each floor, in trustees', librarian's, art and other reading or reference rooms, in addition to the safe in the business office and a small safe for overnight cash, built into the wall of the circulation workroom. Atlanta has one 8' x 10', Pittsburgh two 10' x 17'. The Providence record room vault is 21' x 24'. Grand Rapids' is only 5' x 3', Newark's 8' x 8'. See stack chapter for cheaper enclosures for valuable books.

EDITING AND PUBLICITY

Library editing is or should be closely connected with the knowledge of books, and may well be combined with the general function of book selection or its correlation, passing all book activities through the mind of one competent person who has a bird's-eye view of the whole library collection, its constant up-to-dateness and its public usefulness. Such a person is naturally in a position to prepare annotations and plan the booklists from the whole library in consistent form—a function quite different from that of supervising layout and typography, proof-reading, and seeing a job through the printshop.

The latter function is more effectively handled by another person placed close to the printshop, if the library has any, especially if the trained person in charge of the editing has to cooperate with or oversee the printshop and make decisions as to what job is to take precedence over another already begun. Editing may also be placed with the library's general publicity, but the latter includes the preparation of newspaper articles and possibly the exhibit work, if the library carries on an exhibit program. This sequence—(a) book selecting, (b) preparation, editing and proof-reading of booklists, (c) general publicity, (d) newspaper publicity, (e) exhibits—covers such a spread that in a large library each activity requires a highly competent trained worker. Somewhere within the series a break has to be made; the book selection gravitates between the librarian and the order department; the editing between the book selection and the printshop. The publicity can be more remote, and the exhibit work may be at some dis-



Wellesley Hills Branch has a wing pushed back behind the service desk to provide librarian's office and supervised stack on main floor. Over it is a mezzanine work space (mending, etc.) with cupboards and washbowl.

tance, because considerable space and a variety of equipment are required for assembling the variety of materials. See Ch. 21.

SUPERVISION OF BRANCHES, STATIONS AND SCHOOL WORK

Here again a common purpose and set of problems connect the work of branch supervisor, stations supervisor, and school work supervisor. Each attempts city-wide distribution of books from the central library, first to the various branches, second to the small delivery stations in stores, factories, office buildings, possibly Sunday schools, park or recreation buildings, etc., and, third, to school buildings by means of traveling collections mainly sent out in boxes to be lent to pupils for home reading. If the library has a person in charge of each activity, each will have an office set off from the adequate general work space. In proximity to each of the three there will be corresponding stack space for the books sent out and brought back. Either two or all three may be combined under one head, or the school work may be connected with the children's department.

As these three departments are interested in making up shipments of books and getting them out, it might be proposed to place them on the same level with the shipping room. But this is



At York, Pa., the basement ceiling is only 14 in. above the sidewalk. The shallow areaways admit some light, but steam pipes are so close to the wall they cancel most of it in an otherwise successful basement cataloging workroom, well planned and well equipped.

not so essential as to have the workrooms where they can be well lighted and properly related to the other administrative offices. The branch and stations departments would, for example, doubtless have contacts every few minutes with the reference department in looking up branch reference questions, and with the circulation department and stacks in gathering books on every subject resulting from special branch requests. A second or third floor location is decidedly preferable to the basement, for time taken to move trucks of books is a slight handicap compared with remoteness from other library activities.

DISTRIBUTION OF WORK SPACES

In the small library the main workroom should be on the main floor, while secondary workroom for mending, etc., and staff rooms should be placed on a mezzanine in preference to a basement. The mezzanine, as shown in the illustrations in this chapter and in Plan Chs. 23-32, deserves special attention. Additional ceiling height for the main floor may be worth while to secure this space. The staff is better satisfied and not so remote, for they may be at least within sight, and usually the lighting and general effect are more acceptable. Further, the mezzanines and balconies give opportunity for interesting interior design. See pp. 136 and 139.

BASEMENT OR MEZZANINE

Some basement workrooms, however, are entirely satisfactory except for their remoteness. Even this is not always so great, e.g., at York, where a short stair runs from the workroom behind the loan desk down to a supplementary area, lighted in part by short basement windows. The staff work is compact but differentiated, the cataloging and mending, with their continually changing, spreadout materials, going on in the basement.

In large libraries where space on the first floor is at a premium, circulation workrooms might well be broken up into two or even three levels. In Cleveland the books are returned on the first floor and slipped on the mezzanine. At Baltimore the work is divided as follows: (1) On the first floor back of return desk, slipping, overdues, snags, reserves, etc.; (2) on the mezzanine over this, the typing of registration, of overdues, of book cards, and similar activities; (3) on the third stack level, immediately below the first floor, is the sorting room where all returned books are sorted preparatory to being shelved in their departments. A staff elevator opens from this, connecting the three work spaces.

The numerous examples of mezzanine location for staff rest, lunch and washrooms, seem all to be successful, especially where directly over the main workroom and close to the circulation desk. This releases more main floor space for the workrooms. It suggests the following series of preferred locations on three levels:

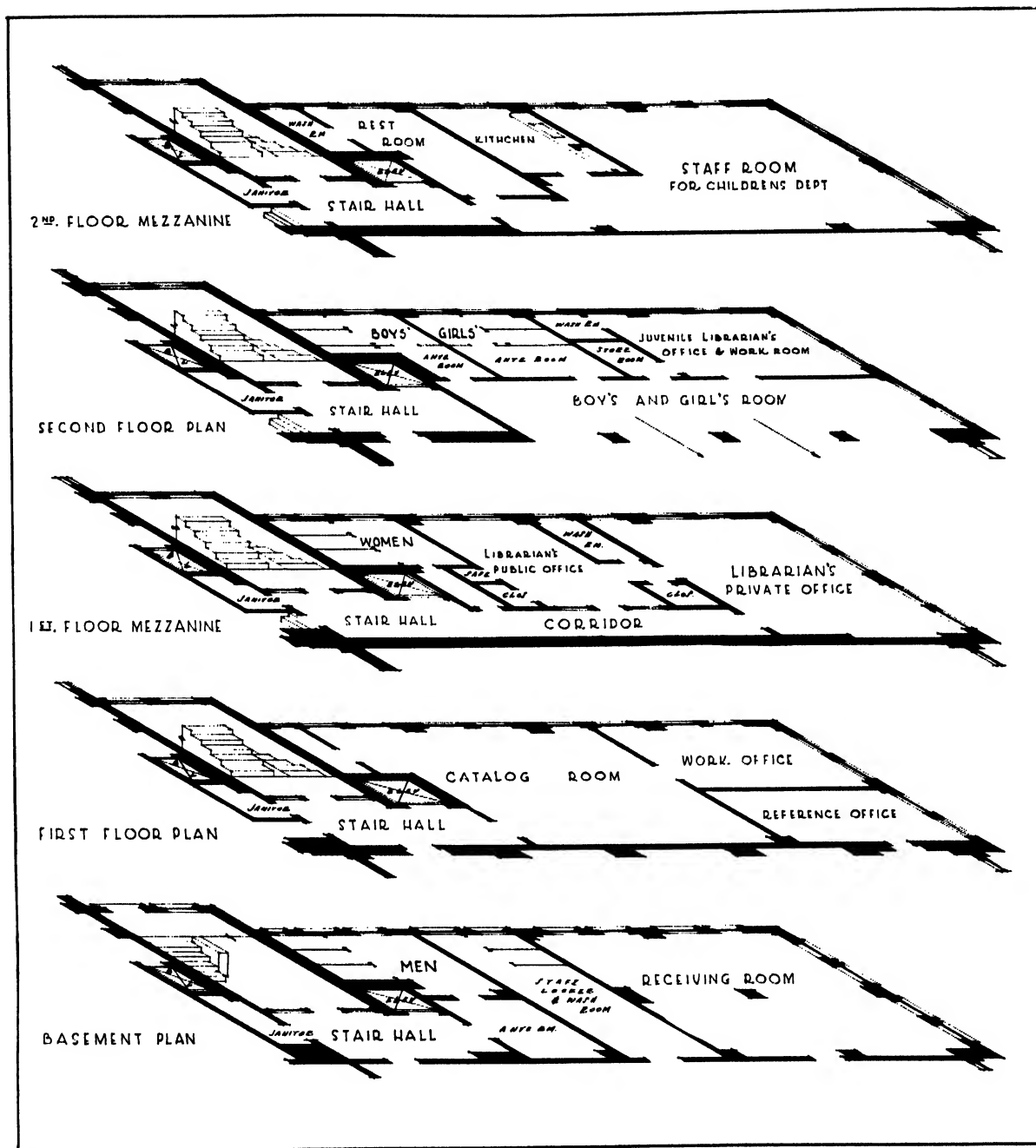
A. If the main floor plan is too crowded to permit circulation and book preparation together, and it seldom does:

Basement—Nothing, except for storage material.

Main floor—Workroom for circulation activities. Librarian, reference and children's desks in their respective rooms, with low-screened work space adjoining.

Mezzanine—Catalog and preparation workroom, and mending. Staff quarters: lounge, washroom, kitchenette.

B. If mezzanine area is too limited for foregoing:



Berkeley's unique series of work and staff accommodations on five levels, lined up vertically, is described in the text, pp. 184-185. Library plans in Ch. 30.

Basement—Storage. Mending and bindery work.

Main floor—Workroom for circulation activities.

Librarian. Reference and children as above.

Periodicals opened and checked.

Mezzanine—Catalog and preparation workroom.

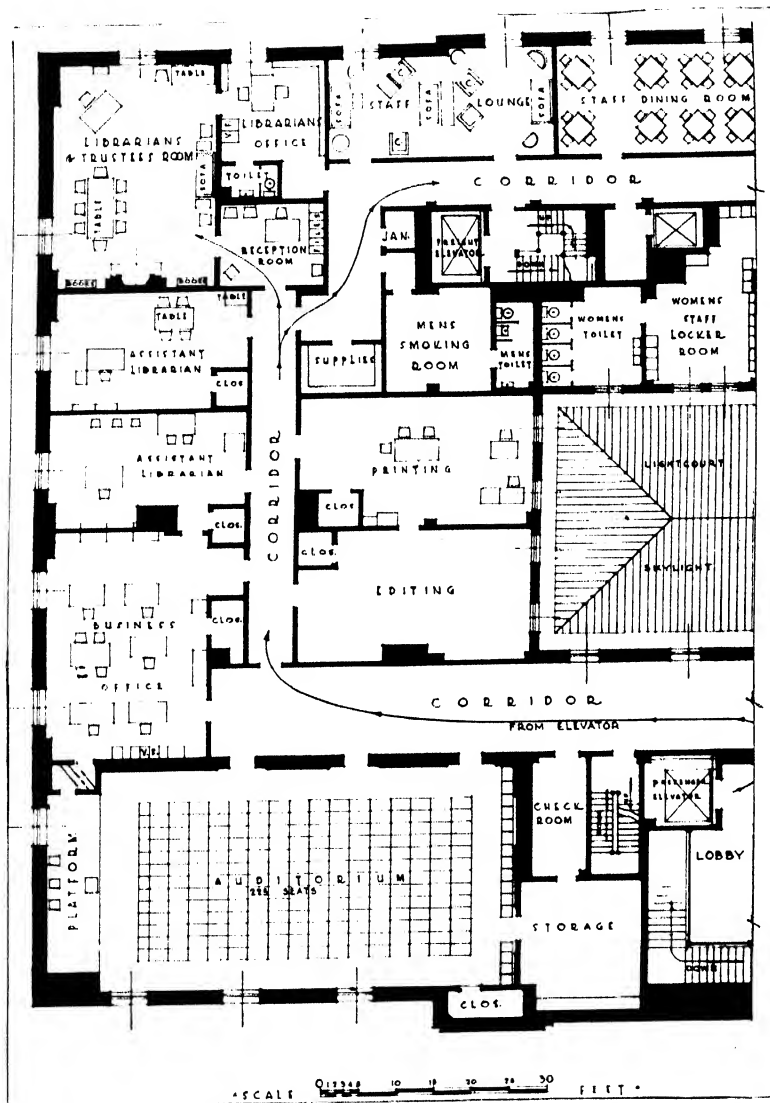
Staff quarters: lounge washroom, kitchenette.

C. If the mezzanine area is even more limited:

Basement—Mending and bindery work. Staff quarters: lounge, washroom, kitchenette.

Main floor—As in A. and B.

Mezzanine—Catalog and preparation remain because work is continuous and needs good light.



Rochester's administrative suite is on the third floor, the Trustees occupying the fine rear corner room. The librarian shares this and has an adjoining quieter office and workroom. He is close to those with whom he has almost constant administrative contacts, but remote from the flow of new books.

RELATIONSHIPS OF WORK AREAS IN FIVE LARGE BUILDINGS

The number and complexity of offices and workrooms in large buildings are so great that it seems well to present examples of the groups of related rooms that are to be found in five of the larger buildings.

The central library at Berkeley, planned by experienced librarians, is generous and logical in its provision for staff working space and comfort. See page 183. The areas utilized by the staff have been lined up directly above and below each other on the various levels. On the main floor the workrooms are fairly near the public service desk in the center of that floor. In the main floor work alcove is the catalog room and a small general workroom, while staff rest rooms and lockers are directly beneath on the basement level. The children's workroom, the special combination office and workroom for the librarian and staff, and small rest rooms adjoining are located on the second floor and second floor mezzanine levels in the rear of the boys' and girls' room. A study of these elements for a library which at Central handles a circulation of 484,000 beside the work involved in its branch system, shows no unnecessary accommodations for the staff, but indicates that careful thought has been given to stairs, elevators, and the handling of each employee's

work as economically of travel as possible. However, there must be times when numerous employees are too remote; all the professional staff of the library ought to be quickly available for readers when their turns come. Berkeley exemplifies the effort for adequate work and staff rooms, from the staff viewpoint, though the attempt to line up all these elements vertically has removed some workrooms and staff members too far from the points where at other hours they serve the public. Workrooms (for public department staffs) should be close to public service desks when possible.

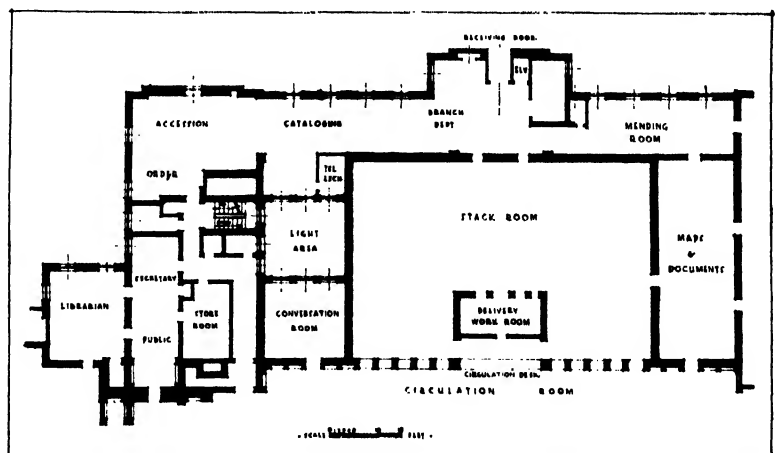
Contrasting with Berkeley, Pasadena distributes nearly all its offices and staff workrooms horizontally on one level. As noted elsewhere, this makes for an expensive building. The relationships of the following are carefully worked out in the plan: librarian; public waiting room; secretary; order; accession; catalog; branch supervision; book mending—all in a logical series but occupying a more generous amount of space than most libraries wish to give. In addition, the circulation staff, the reference staff, and the children's staff have workrooms next their own service desks; so the total amount of staff space in the Pasadena building is unusually large. Why is it not sensible? In buildings of a previous generation far more valuable space was wasted in lobbies and grand stairways. Perhaps exception could be taken to housing the book-mending on the main floor, an activity easy to separate and place on another level. Also, the effort to keep the staff above ground could here as elsewhere be partly met by a mezzanine. While stairs and other building elements would subtract a small proportion of this added space, it would release at least two thirds of the main floor staff area for public use. In climates or on sites where the spread of the Pasadena building would make too high a cost for ground and building and heating, this would be a major factor.

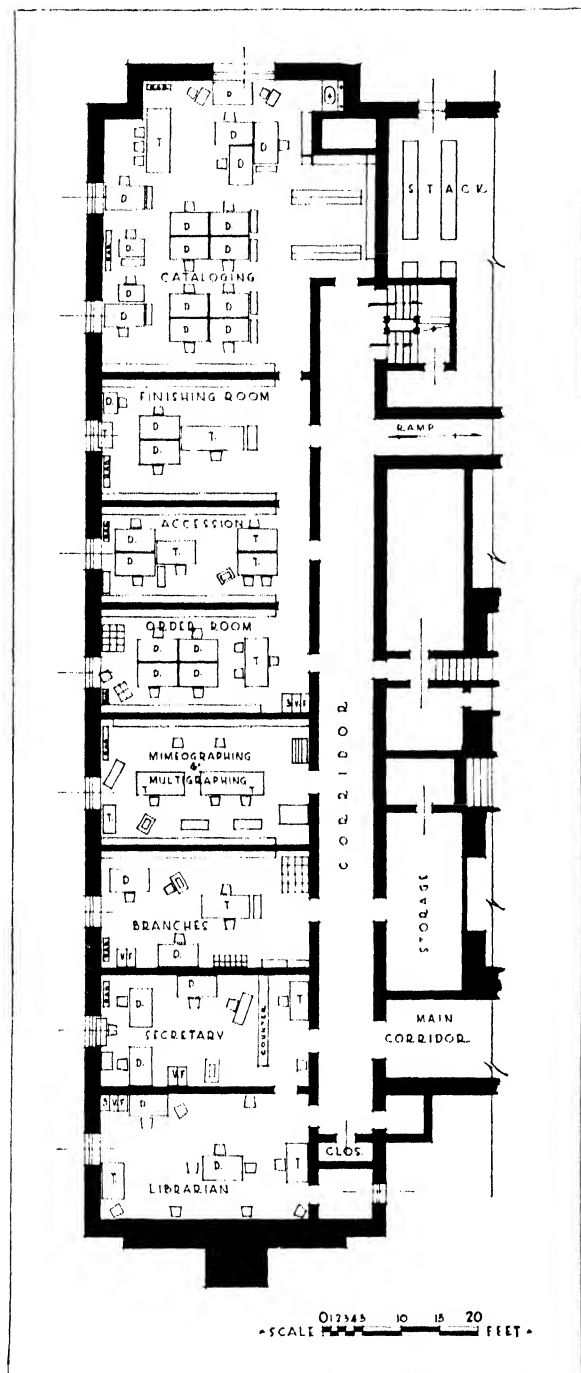
Another example of first floor space utilized for offices and staff workrooms is that at Indianapolis, where one entire wing (see Ch. 30, p. 301)

is devoted to the following separated rooms: librarian; secretary; branch headquarters; mimeographing; order; accessioning; general finishing workroom; catalog room. The latter, being the important room, is given the rear corner with the best light. The books have to be moved back and forth from these rooms to the delivery hall and the bookstacks over a ramp because of the difference of five or six feet in the levels, lacking a staff elevator near by on which to move the trucks.

At Rochester and Baltimore, offices, business and supervisory workrooms, and preparatory departments are at the rear of an upper floor; in Baltimore on the second; in Rochester on the third, the latter permitting more freedom and spreading out so that the third floor plan shows provision for few public activities except the auditorium. The trustees and librarian are reached through a rather long corridor, passing the business office and the assistants-to-the-director on one side. See plans above of portions of 2d and 3d floors. At Rochester the printing and editing are opposite, and another corridor extends from the librarian's office along the rear past the staff lounge, dining room and kitchen to the book order and catalog department, the latter reached also by a shorter route from the front public elevators. The catalog room on the third floor rear, like Baltimore's on second floor rear, is connected with the public catalog on the main floor by a staff elevator.

In interesting contrast to Berkeley's five-level layout, Pasadena's offices, staff and workrooms are all spread out on the main floor level, an arrangement most satisfactory to all readers and to the staff because they are conveniently together for quick inquiry and service. But this involves high building cost and requires ground area generally impossible to attain in a large city, for the library should be downtown in the high-property-value district.





Because at Indianapolis the reading rooms are on the second floor (see plan in Ch. 30) a wing of the first floor is devoted to offices and workrooms, all separated by walls which hamper changes after 20 years of increased crowding. Low movable screens and fewer of them would be the modern method. The public catalog is at some distance on a slightly higher level, though used constantly by the first floor staff also.

Space does not permit analysis of other examples of workroom and office arrangement in large libraries; they may be studied from the plans in Chs. 28-33.

WORKROOM EQUIPMENT

The formula, 75 sq. ft. per regular assistant, including equipment, allows a bit of leeway for extra temporary workers in the general, or circulation, or cataloging workrooms. The equipment itself must be as complete as possible for all the pieces of work that are to be handled. Every available inch of wall should be fitted with adjustable shelves; workrooms never have enough book space. One or two sections should be 12 in. deep for oversize books and periodicals and supplies. Each workroom should have its own washbowl and, if for five or six workers or more, should have electric water cooler or bubble attachment unless these facilities are available near by. Above the washbowl, mirror and recessed shelves should be provided for paste, brushes, small tools; below it additional shelves for messy supplies, with or without a cupboard door to hide them.

As much cupboard space should be taken from shelving as is required for stationery and supplies for two or three weeks' use; more should be kept in basement or stack storage space. Desks: flat top or typing, as the need may be, one for each worker. Single pedestal desks are more compact in crowded workrooms, but double are always more satisfactory. Vertical files, only if pressing need. They fill up quickly, and the habit once formed there are cries for more cases, even as catch-alls for storing stationery and supplies!

Tables should preferably be linoleum topped; nicely finished wood desk and table tops used for mending, pasting, arranging packages of dirty magazines, will soon be ruined. For an emergency covering on which to cut materials, heavy binders' board is better than the sheet blotters. Plain work benches or counters, 30" high, (26" high for typewriter benches or cutout portions of counters) even if only 18" or 24" deep instead

of the usual 30" table width, can often be built-in to advantage.

The element of quiet needs special thought. A heavy, small-figured pile rug drawn taut and fastened at the edges, sound-absorbing walls and ceiling, silent typewriters—these are practical in many small workrooms where the work is mostly typing and looking up questions, and readers must not be disturbed. They can make the busiest workroom a fairly quiet and restful place and prevent the racket which sometimes reaches the public ear. This quiet may be pierced by a buzzer to call someone to the service desk for emergencies, and the department head must, of course, have a telephone.

SUGGESTIONS ON REFERENCE AND SUBJECT WORKROOM EQUIPMENT

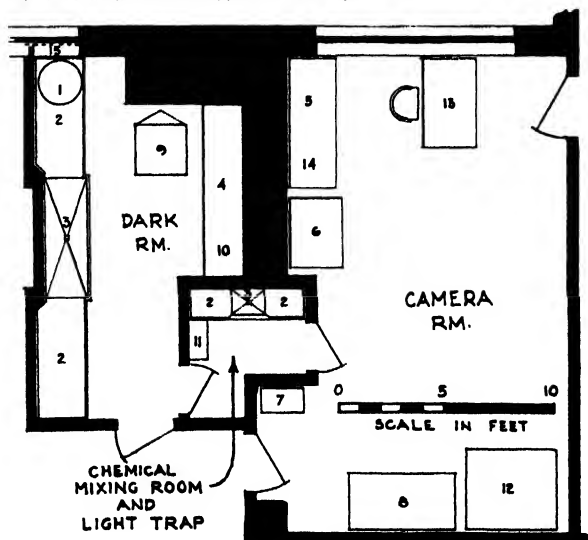
The experiences of the recent libraries having subject departments suggest, in addition to the points above under Equipment: workroom screens glazed low enough (40" from floor) so assistants sitting at desks can easily look through at readers; desks placed so workers do not sit in their own light. Any department requires a minimum of four workers to cover 9 A.M. to 9 P.M., plus a typist and page, plus expansion room for one or two—a total of eight; 18 x 18 to 20 x 25 ft. is therefore a fair minimum of clear space inside the doors, bookcases, and stairs. Local history and art departments need still more room because of the great amount of material spread out and in process. Three or four *types* of work should be differentiated: (a) sorting and arranging books belong not in such a workroom but in a stack sorting room; (b) typing and clerical work require sound-absorbing carpet ceiling and walls, noiseless typewriters and placement of the desks so that professional workers (c) may concentrate on more quiet checking, preparation of booklists, reference work; finally (d) the head should, if possible, have a special screened space for more privacy. Card index

cases (3 or 4 trays per assistant) will be needed in the room for waiting order cards, etc., in addition to the files in the public rooms mentioned in Ch. 14. There is a tendency to attract vertical file cases and other containers for material that could be in some near-by corner, alcove, or even bookcase space, instead of in a crowded workroom. Cupboards, bulletin board, and more shelving are called for.

REMINDER

Book lift, elevator, and workroom locations should be correlated, with one placed in proximity to the other so that staff travel and time will be saved. A recent large building on four levels has only one elevator, at the rear of the building; the loss of time is enormous.

Microphotography Workroom, Temple University. Key: 1. Print washer, 2. Drain boards—shelves above, drawers below, 3. Sinks—shelves above, racks below, 4. Printing and enlarging bench—shelf above, drawers below, 5. Print mounting and trimming table, 6. Electric print drier, 7. Supply cabinet, 8. Camera table, 9. Projection printer, 10. Film rewind, 11. Scales, 12. Drying reel (should be closer to dark room), 13. Desk, 14. Electric dry-mounting press, 15. Window with sliding light-tight metal shutter. Reproduced from "Journal of Documentary Reproduction," 1:301, 1938, by courtesy of A.L.A. and J. Periam Danton, whose article discusses and illustrates this room.



CHAPTER 19: STAFF ACCOMMODATIONS; REST, WELFARE, SOCIAL ROOMS

STAFF quarters include a lounge, recreation or staff room with lunch room and kitchen adjoining, a quiet room with a cot or two, a dressing room with lockers and toilet room as commodious, well-equipped and easily accessible as can be arranged. In a very small library with restricted space, a lounge, lunch room, and kitchenette may be combined, with an adjoining toilet room. Staff quarters are an established feature in the modern library, an investment in the well-being of the staff, "not only humane but economically profitable," as borne out by tests made by personnel engineers.

The ideal staff lounge is attractively and comfortably furnished;¹ has sufficient settees, chairs, and tables; is well daylighted, heated and ventilated, and provided with supplementary electric or gas heat for chilly days. It has bright colors, attractive draperies, an air of cheerfulness and gaiety, as different as possible from the serious workrooms and reading rooms.

Here the librarians or the staff can do what they like in furnishing and color. Eliminate the brown-yellow of stained wood and many lovely color schemes are released as possibilities. One room is done in several shades of blue, silver, and a little black; another in French gray and rose-pink.

CHECKLIST FOR STAFFROOMS

These are desirable items: Linoleum, cork tile, or carpeted floor; rugs; built-in seats with cushioned seats and backs; easy chairs and chaise-longues; couches, day-beds, or settees; foot stools; tables; writing desk; pictures; draperies; fairly large mirror; electric clock; water cooler or drinking fountain; dish cupboards and shelving; floor or table lamps; indirect general lighting; large windows; fireplace; adequate ventilation; heating; plumbing (if sink or lavatory are to be included here); stairway from staff

quarters to roof or outdoor recreation deck, if any.

STAFF DRESSING ROOMS, LOCKERS, AND WASHROOMS

A toilet and a lavatory must be provided, even in the smallest building, either on first floor, basement, or mezzanine. These should be placed inconspicuously, yet allow proper supervision if used by the public—an unsatisfactory combination.

While staff cloak rooms or lockers can often be fitted into some convenient but otherwise unused space, they are best placed along the walls of the washroom corridor or as near as possible to the washroom. Lockers should be large—long enough for coats hung under a hat, with parcel shelf 9 or 10 inches below the top. Combination locks avoid the bother of lost keys. If the library covers several floors, additional lockers, toilets, and washbowls should be scattered throughout the building, especially near departments at a distance from the large, general dressing rooms. A staff washbowl should be placed in or near each department to save time and steps.

The dressing facilities may consist of no more than a convenient shelf or two for hats, gloves, etc., and a fairly large mirror, perhaps placed over the lavatory in a small staff room. It may be a room with forced ventilation containing all modern conveniences—lockers, lavatories with glass shelving above, mirrors with individual lighting fixtures, toilets, cubicles with provision for packages, towel cabinets, paper towel receptacles, tiled showers and baths, a bench and a chair, a shelf for packages, coat-hooks, hot water supply, and asphalt or tile flooring and wainscot-

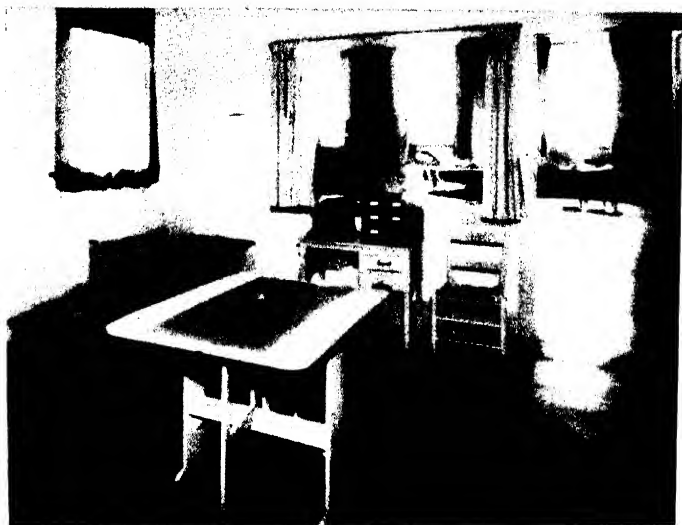
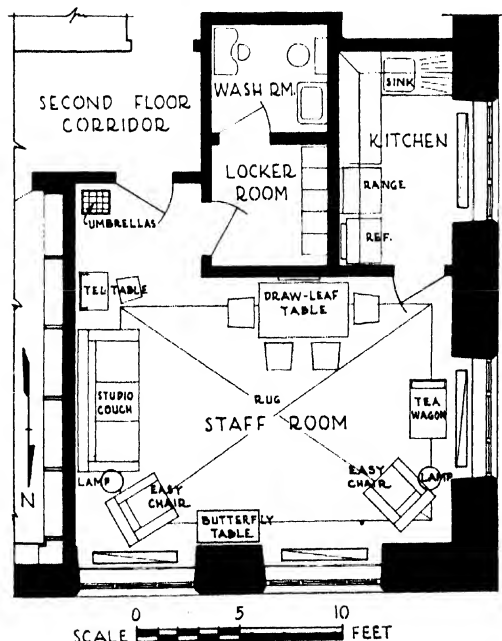
¹Nell A. Unger. "A staffroom rehabilitated as a WPA project," *Lib. Jour.* 64:883-84, Nov. 15, 1939, for several useful ideas.

ing that water cannot damage. A staff of 30 or 40 or more requires a bathtub or shower, for schedules of many employees bring them from home early in the morning until late at night, e.g., they may go on duty at night after a warm day's outing or shopping trip in summer.

QUIET ROOM OR REST ROOM

With a large staff, a quiet room equipped with couches or chaise-longues is likely to be in great demand for noon hour rest. For genuine quiet, the walls must be sound-proof or the room not exposed to street noise, work sounds, or conversation. Ventilation is more important than illumination. Provision of screened-off space is not so good as having the quiet room a separate entity. One large library has its quiet room, containing eight cots, adjacent to the dressing room with a door between. Adjoining the quiet room,

Staff suite, Concord, N. H., 1940. The relationship of and approach to each of the three major elements carefully worked out, with a single entrance to the group. Door to lockers and toilet not in evidence from the staff room. Space insufficient for a proper number of lockers. Kitchen a separate room. Mechanical exhaust ventilation from range and toilets.



At a small library like Rose City Park Br., Portland, Ore., there may be only one or two persons on duty, so supervision through a large plate glass screen may be essential at times. At other times, curtains may be drawn. This room combines workroom and staff lounge. A kitchenette six feet square adjoins the staff room at the rear. The walls, trimming, furniture and curtains are in bright colors. C. H. Wallwork, architect.

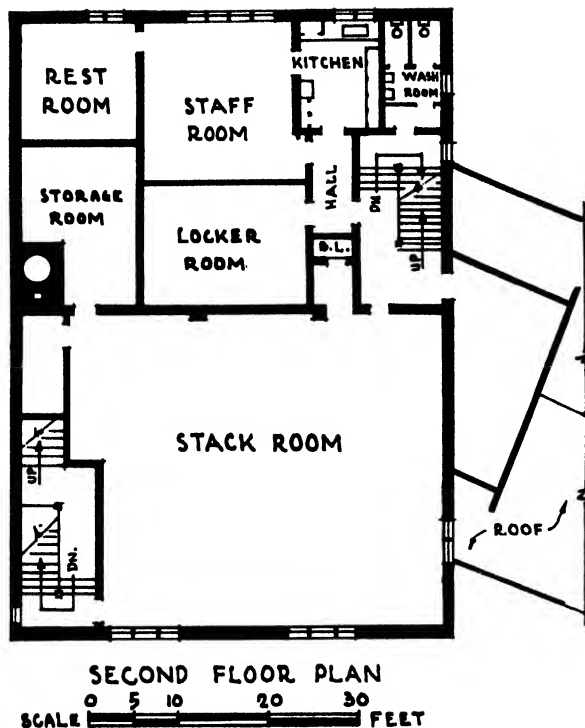
a small room equipped with cot, wash bowl with hot and cold water, and medicine cabinet is used for sudden illness.

KITCHEN AND LUNCHROOM

Library salaries compel many assistants to bring their lunches or prepare them at the library. Even in a small library there is a necessity for a kitchenette equipped with a gas stove and a sandwich grill or electric plate for heating soup or making tea or coffee.

The staff room may be of such size and attractiveness that small groups of teachers, clubs, etc., may be entertained at tea, giving them greater understanding of library service and widening its influence in the community. At Greenwich, Conn., tea is served every afternoon to the staff and their invited friends or readers; many other libraries have weekly teas for companionship and a break in the rush of work.

Checklist of items (the number increasing with the size of the staff): Gas or electric range; refrigeration; good sized sink, top 36" high, 24" deep, with hot and cold water; cupboards set 18" above sink top and 13" deep; mouse-proof lockers each large enough to hold the dishes and food of one staff member; cabinets for general dishes and cooking utensils, such as large ket-



At Parkman Branch, Detroit, a second story over the central area provides additional stack space and staff quarters. The latter contain, besides washroom and lockers, the desirable series of three items—rest room, staff lounge, and kitchen. As usual, the lunch table is in the staff room since space seldom permits a separate lunch room. Locking one door closes all staff quarters except the lavatories on the stair landing.

tles, saucepans, frying pans, percolator, toaster, etc.; refuse can, paper towel cabinet. Outside windows for light. Cooking odors require the kitchen to be shut off by a door; if necessary provide a sheet metal hood with forced ventilation.

At Bloomfield, N. J., screens divide the work-room into two parts, and with cupboards and a small stove make a staff room and kitchenette out of the front, an economical idea, though not as satisfactory as a separate kitchen might be. Practically all the West Coast branches enjoy separate small kitchenettes or roomy kitchens as part of their staff quarters.

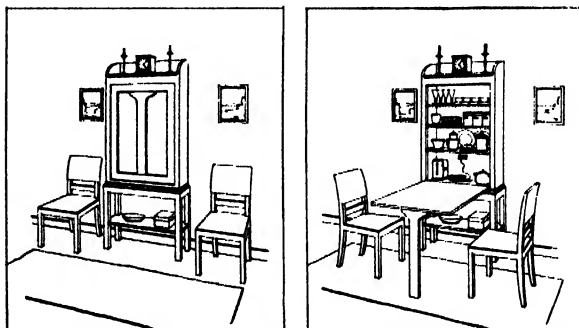
Sometimes the kitchen is not near the staff quarters, and is used for community meetings, as in the basement community room in the Washington Square Branch at Kalamazoo. Some

libraries provide separate kitchenette for the public. Detroit locates its lunch rooms, pantry, kitchen, etc., as a suite on the second floor, convenient to the staff assembly room and to club, rest, and recreation rooms.

As a rule the lunch room adjoins the kitchen or kitchenette. It should be a gay spot; draperies and wall decorations lend a cheerful atmosphere; maple tables and chairs are pleasing, or the furniture may be of chromium-plated metal, formica and wash leather; a sideboard affords interest. Pasadena has brilliant draperies, grape-green furniture, and rush-bottom Mexican chairs. A delightful roof-garden has been furnished by staff funds with comfortable lounging chairs, tables, and large umbrellas.

Large libraries will consider the advisability of a staff cafeteria—no small undertaking and a considerable expense, as the space, equipment, and overhead are generally contributed by the library. Since volume in numbers is absolutely necessary in making a cafeteria meet expenses, the library should be sure that a sufficient number of staff members will take their meals in the cafeteria regularly. Some librarians feel rather strongly that the staff should get outdoors and away from library shop talk once a day, and do not favor cafeterias. Besides its staff cafeteria, Cleveland graciously puts a committee lunch room at the disposal of the library board or staff committees for luncheon discussions. Los Angeles completes its third floor staff suite with a regular well-equipped cafeteria—kitchen and

Combined drop-leaf lunch table and dish cabinet. For small library or branch with limited space. Connection for toaster or hotplate.



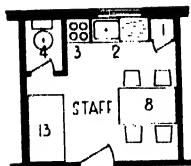


FIG. 1

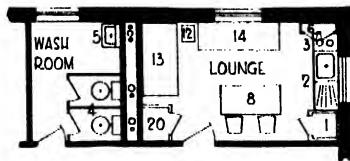


FIG. 2

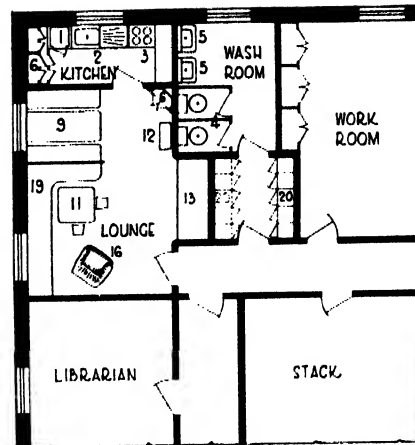


FIG. 4

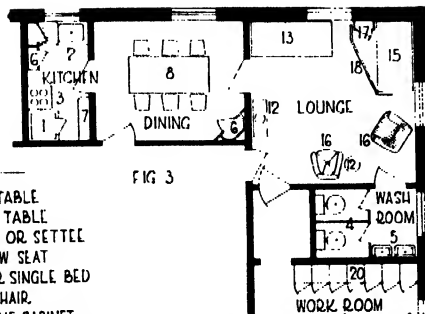


FIG. 3

- KEY
- 1-REFRIGERATOR
 - 2-SINK
 - 3-STOVE OR HOT PLATE
 - 4-TOILET
 - 5-LAVATORY
 - 6-DISH CUPBOARD
 - 7-COUNTER
 - 8-DINING TABLE
 - 9-DINING NOOK
 - 10-FOLDING DINING TABLE
 - 11-CARD TABLE
 - 12-SMALL TABLE
 - 13-COUCH OR SETTEE
 - 14-WINDOW SEAT
 - 15-COT OR SINGLE BED
 - 16-EASY CHAIR
 - 17-MEDICINE CABINET
 - 18-REMOVABLE FOLDING SCREEN
 - 19-CORNER SEAT
 - 20-CLOTHES CLOSET OR LOCKER

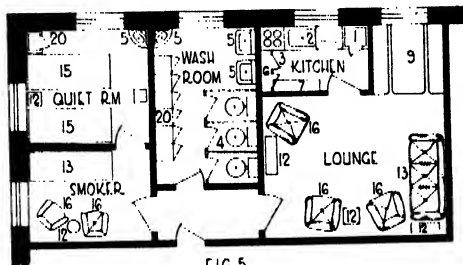


FIG. 5

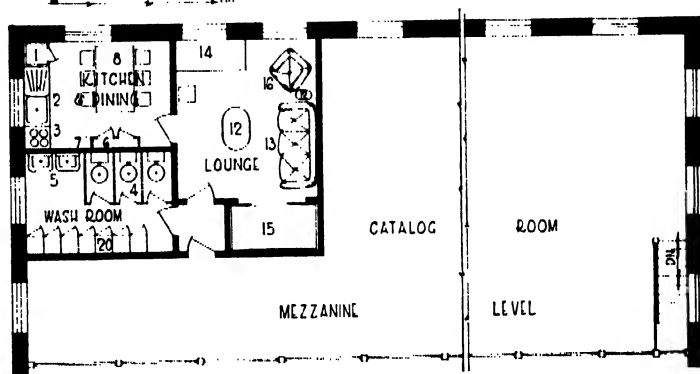


FIG. 6

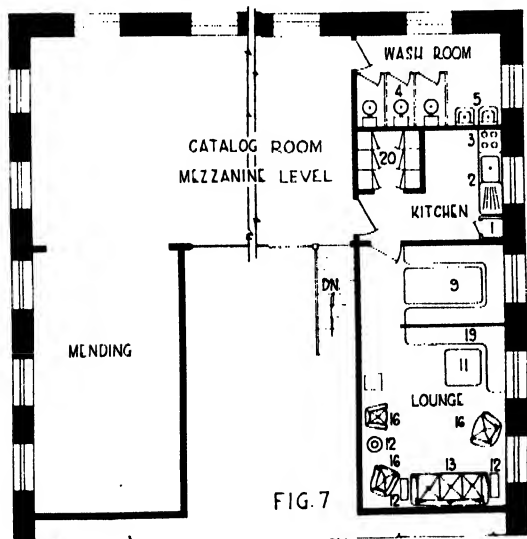


FIG. 7

SCALE 0 1 2 3 4 5 10 20 30 FEET

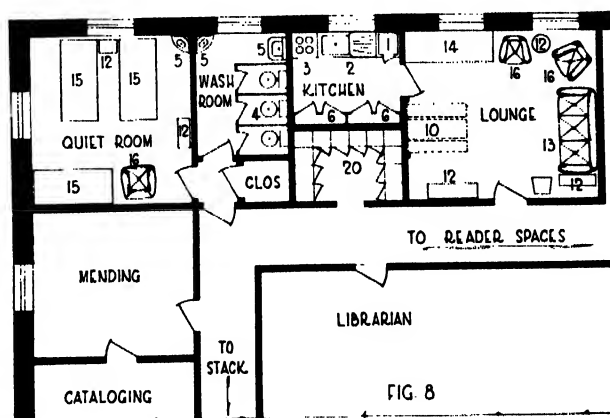
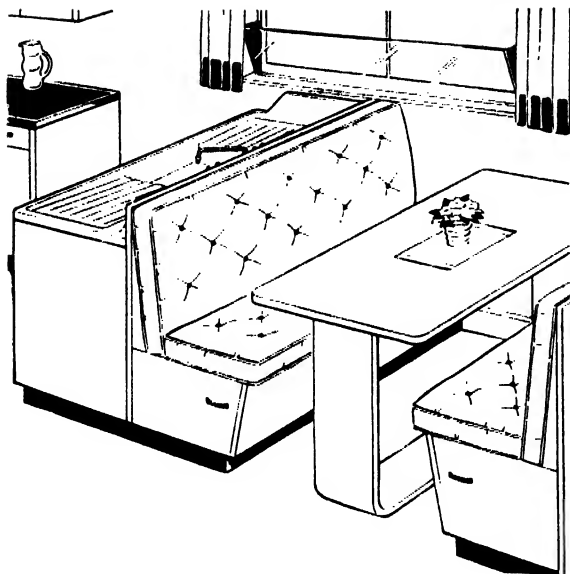


FIG. 8

Possible arrangements of staff quarters and furniture. Some of these are in proximity to Catalog and Work Rooms, others entirely independent. Locker space should be near but not inside of washroom space. Kitchen and lunchroom may be combined in a very small library, while in larger library buildings, the provision is increasingly varied and generous.



Space-saving arrangement of kitchenette equipment, with lunch table for four. Courtesy of Crane Company.

dining room where two hot meals a day are served, plus a small lunch room for its men. Philadelphia has its staff cafeteria on a sunny roof terrace with officers' dining room, smoking room, and washrooms in close proximity, besides a large staff kitchen.

MEN'S QUARTERS

In the branch or small library the staff is likely to be all female, except for pages who generally have no special accommodation but use the public washroom or a basement toilet. In larger libraries with two or three or more professional men workers, or part-time college students, a men's washroom and lounge, with sink, hot plate, lunch table, card table, chairs and settee, should be provided in an appropriate part of the building.

SMOKING ROOM

When the staff reaches considerable proportions, small rooms may be set off for the exclusive use of smokers. Separate rooms may be provided for men and for women. Chairs, settees, smoking stands, and a small table or two comprise the needed furniture. Forced ventilation is a necessity.

LOCATION OF THE STAFF ROOMS

While all provisions for the staff are often concentrated in one room in a small library, it is better if the cloakroom, lockers, and toilet room are separated from lounge rooms and lunch rooms, though they are preferably gathered as a unit in one portion of a larger building. Staff quarters should be convenient to the staff entrance and reached by automatic staff elevator. With a kitchen and its odors from cooking, special care must be taken in laying out staff quarters. Most small libraries find it practical to place them in the uncrowded basement if this is well ventilated and lighted. Others place them on an upper floor, with the possible exception of the cloak or locker room. The most desirable location naturally would be at an equal distance from all departments, easily accessible by the staff, yet safe from public intrusion.

A mezzanine above the main floor, for staff workroom and adjoining rest room and lounge, is an excellent solution for the problem of extra space convenient to all in the small or medium sized library. In larger buildings with public or staff elevators and the penthouses which shelter their machinery (as at Hild Br., Chicago), there may be an ingenious utilizing of mezzanine and penthouse space for attractive staff quarters as shown in Ch. 28.

CHAPTER 20: SUPPLEMENTARY ROOMS: UTILIZING BASEMENTS

THIS chapter discusses a number of provisions and activities which require attention, but which do not come in direct contact with the public and are placed on the main floor of the building only under unusual conditions. For that reason the basement suggests itself as a possible location for each of them, though several are placed on second floors of some buildings, or occasionally, where the site is generous, in a special wing.

A wider realization of the possibilities of the modern basement and of the improved techniques and equipment for dampproofing, basement floor coverings, heating, lighting, and ventilating, make it decidedly important to capitalize the library basement and use its valuable space rather than to regard it as only an unattractive cellar.

This is entirely compatible with what was said in Ch. 12 as to keeping the main floor of the building close to ground level. Though sixty years ago William F. Poole said that "the basement should be mainly above ground, or it has no function in library economy and is a general nuisance," and though more recently J. A. Lowe and Chalmers Hadley called for basements ten feet in the clear and four or five feet above ground, the present authors do not share this solicitude for high basements. Several recent libraries have dry and satisfactory basements entirely below ground level. But Ch. 12 also discussed the possibility, where sloping ground permits part or full length basement windows, of placing children's or story-hour rooms, lecture rooms and newspaper reading rooms in the basement with separate entrances.

POSSIBLE PROVISIONS

In smaller libraries the basement is likely to contain only the absolute necessities, such as janitor's room; shelving for duplicates; supply closets;

public and staff toilets; heaters; coal, ash and waste paper bins; etc. If space can be found, a general utility room will be most useful, serving as workroom and, supplied with inexpensive wall shelving, as storage for duplicate books, unbound magazines and other material, and sometimes used furniture. The following are legitimate candidates for basement space—many of them discussed in detail in other chapters.

Several of these items will be protested as being preferably on the main or second floor. If that is possible, so much the better, especially any public reading rooms, like children's, and all staff workrooms, such as bindery or mending, or the schools, branches and stations departments.

- Children's rooms and children's librarian's office (see Ch. 16)
- Auditorium—club room—assembly hall—art gallery—story-hour room (with possibly dressing rooms and cloak rooms) (see Ch. 22)
- Newspaper room (see Ch. 14)
- Books for blind, reading room
- Kitchen (see Ch. 19)
- Staff rest room (see Ch. 19)
- Staff workrooms (see Ch. 18)
- Staff lockers—pages' lockers—janitors' lockers, etc.
- Staff and public toilets and washrooms
- Bindery and repair shop (and stock room)
- Print shop (and stock room)
- Work with schools, branches and stations (see Ch. 18)
- Shelving for duplicates, almost always
- Stacks (see Ch. 15)
- Vault
- Packing and shipping room
- Garage
- Carpenter shop
- Laundry
- Supplies department
- Store rooms

Building superintendent's and engineer's office
(with lavatory)

Janitors' quarters (with lavatory and shower bath)

Charwomen's lockers and cleaning closets (with
lavatory and bath)

Boiler—oil tank—coal storage—ash receptacle

Electrical machinery—transformer room—refriger-
ating room—ventilating fans—etc.

Elevator and book-lift machinery

Pneumatic tube base

Vacuum cleaner base

Inter-library telephone base

Water pump—fire pump

Waste paper storage

Incinerator

PUBLIC TOILETS

Public toilet rooms are a nuisance. While such conveniences should be offered serious readers who have to spend many hours over their books, such readers are rare, and public toilet rooms are largely patronized by persons who come to the building for nothing else. They must be included in larger buildings, especially if located in a business section; a separate attendant or frequent inspection is essential. Small village library buildings and branches can generally dispense with them. Several libraries have encouraged the creation of a public comfort station in the neighborhood and banished the problem. In many libraries a key or token must be asked for at the desk, thus discouraging idlers.

First floor space is generally too valuable for them and too accessible for outsiders. The basement is a possibility if the level of the street sewer permits it. The second floor of a large building, more remote, is better still. Requirements are (*a*) separate rooms for men and women, each with forced ventilation; (*b*) convenient, yet not too near the entrance, as they will be too public and invite outsiders; (*c*) adequate supervision of entrances and exits; (*d*) rowdy and foolproof equipment, see Ch. 37. Note the public toilets of the Los Angeles branches, all with outside entrances; Brooklyn's on the first floor, beyond the circulation room, to discourage their use by outsiders; Cleveland's in the basement; Philadelphia's entered through

the newspaper room; Portland's large station for men with separate outside entrance, maintained by the city.

JANITOR'S QUARTERS

Janitors deserve a room of their own, simply furnished with a table, chairs, lockers, cleaning supply closet, and a washroom, the latter with shower and an admonition to use it every day or two. Charwomen, likewise, a room and equipment of their own. If the head janitor has charge of the building, he needs desk space, located where he will be most convenient to boiler room, stock and storerooms and supplies department. If he can make things or do repairs, he should have a small shop with bench, vise, sawhorses, but preferably his own tools. Janitor's living quarters within the library, discussed in Ch. 7, are provided in several of the larger libraries: Portland, Ore.; Howe Br., Albany; Fordham Br., New York; and Pasadena, either in basements or on upper floors. Such quarters are better on an upper floor with separate entrance after library hours, double walled space for sound-proofing, and a mechanical ventilator to draw off cooking odors above the public rooms.

JANITOR CLOSETS

Place a janitor closet on each floor—not less than 6' x 6'—containing, besides a low slop sink and hot and cold water (useful also for first aid in fires), mops, buckets and wringers, mop trucks, polishing machine, floor brooms, soap, paper towels, and other supplies. See Ch. 7.

BUILDING SUPERINTENDENT'S ROOM

In a large library the superintendent needs an office near the basement entrance and reached by elevator, to reduce annoyance from peddlers and would-be janitors. Provide desk, some chairs, small table, vertical files, a cupboard, and shelving for catalogs and small items.

HEATING AND FUEL

The boiler stack location and the convenience of fuel delivery mean that the heating plant

usually goes in a rear corner, or along the outside perimeter. Library buildings follow standard practice. Coal delivery chutes and other unloading points should be located so as not to block the driveway or other doors.

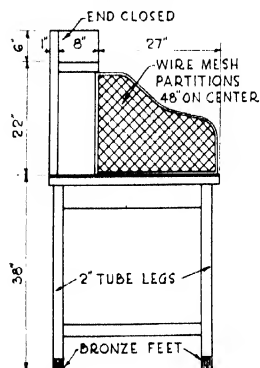
PROVISIONS FOR SUPPLIES

The following four classifications will probably embrace all necessary provisions for storage of supplies—the amount of space and number of cupboards or storerooms determined by the size of the library:

1. *Office supplies:* (usually adjacent to the librarian's or business office, on main or second floor, and readily drawn upon) paper, stationery, labels, ink, pens, pencils, pencil sharpeners, desk blotters, memo pads and other such miscellany.
2. *Operating supplies:* brooms, soap, mops, pails, dust brushes, paper towels, storm windows, electric lamps, window screens, and other accessories, including perhaps the necessary tools for the janitor in making minor repairs. Provision should also be made for garden hose, rakes, lawn mowers, etc., if used; they might conveniently be located in an outer basement or main floor vestibule, as at Pasadena, Cal. All these near janitor's room. Long ladders, folding or extension, are a problem; sometimes stored on wall of garage or near stairway or basement entrance for quick access.
3. *Excess equipment:* desks, tables, typewriters, chairs (including chairs for lecture room if that room is used for other purposes), typewriter desks, card catalog cases, filing boxes, vertical files and other equipment, new or already used, but too good to discard, and now "on call." In basement or in

an attic or upper room easily accessible from the elevator or a stairway of sufficient size to permit easy passage.

4. *Bulk paper stock, etc.:* If the library operates its own bindery, mending room or printing shop, an additional storage room adjacent or accessible is necessary, where paper



Branch shipping room, St. Louis Public Library, showing steel bins with shelves under for making up daily shipments to branches and stations. The bins were copied in the Baltimore building, as detailed in the accompanying diagram.

stock, buckram, cover boards, leather, thread, glue and paste can be stored.

Details such as the need for hinged or sliding doors; bins; open shelving; drawers; pigeon-holes; hooks, etc., must have forethought in the planning of each storeroom to save steps and time later. Regular steel stockroom shelving is recommended for such storage.

If the library has several branches, and stationery, printed matter, brooms, soap, etc., are bought in quantities and stored for branch use, it may be well to have the storeroom near the shipping room, so the shipping clerk can check materials in and out.

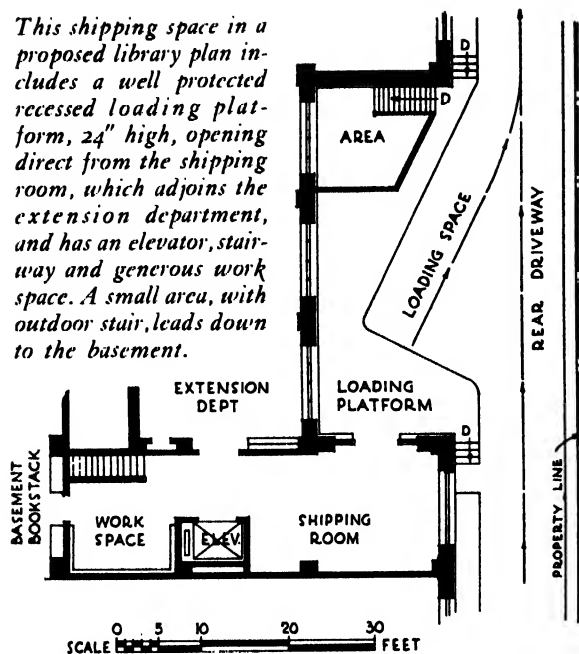
VAULTS

The strong room or vault is sometimes placed in the basement, but if so must be well ventilated to avoid mould. Larger libraries considering vaults for safekeeping of printed materials will investigate screened enclosures in the regular stacks, which are so much better ventilated. For examples of basement vault placing see Wilmington, Del.; Richmond, Va.; Wakefield, Mass.; Palos Verdes, Cal., and Philadelphia.

PACKING AND SHIPPING: GARAGE

Through the packing and shipping room all deliveries to and from the building pass—express, freight, perhaps mail packages, gift books and magazines, branch shipments routed for the

This shipping space in a proposed library plan includes a well protected recessed loading platform, 24" high, opening direct from the shipping room, which adjoins the extension department, and has an elevator, stairway and generous work space. A small area, with outdoor stair, leads down to the basement.



delivery truck. Therefore the room should be spacious, well lighted and close to rear entrance. Naturally, the larger the library the more this room will be used for packing and shipping purposes exclusive of other work. The contrast is very marked between older buildings and many recent ones as to the convenience in location and equipment of packing and shipping rooms.

Individual bins for branches and stations facilitate distribution of books and supplies being prepared for shipment. The bins may be on wheels or trucks, or may be built in place and serviced by ordinary trucks.

The hard wear this room gets must be recognized in the finish. Floors should be of asphalt or asphalt mastic tile (but not the usual asphalt tile).

Trustees and architects and those unacquainted with the library's routines often venture the thought that the shipping room ought to be near the catalog room to avoid travel and loss of time in getting the books out of the cases and into the hands of the catalogers. On the contrary, the travel involved in receiving, unpacking and sending the books to the order and cata-

log room is slight compared with the amount of time spent in the cataloging and other preparatory and distributing processes. The Order and Catalog departments should be placed with regard to the public catalog and other elements, rather than in relation to shipping room.¹

The location of the shipping room, therefore, is related primarily to the outside access to the building, the possibility of a sheltered loading platform and the proximity to the inside elevator.

If the size and shape of the building site permit, a garage each for the library car and delivery truck might be included in the basement or in a separate building at the rear. A space of about 10' x 20' is necessary for the storage of each average-sized automobile. Garages should have floor drains, electric light, and a recessed cupboard for hose, polishes, etc. Also a space for a 20- or 30-gallon oil tank. More libraries should provide roofed spaces 8' x 16', for the staff to park their cars.

A review of recent libraries shows that when the ground is sloping the shipping entrance and receiving room are always on the basement level. In the older libraries, where the upper floor is glorified and made the important reading room floor, they are on the first. In the newer libraries, where the important public rooms are on the first floor and the ground is fairly level, it is much more difficult to place and plan them. The following solutions have been adopted. These should be studied from the plans in Chs. 23-32.

SLOPING SITE

Basement	Garage and Shipping Room	Wellsville Los Angeles
Basement	Shipping Room only	Winchester Palos Verdes West Hartford Wilmington Baltimore

¹Keeping this in mind, valuable ideas may be gained from: C. S. Stein. "Planning for art museum services" (largely flow of materials), in *Museum News*. 16:5-12, Jan. 1, 1939.

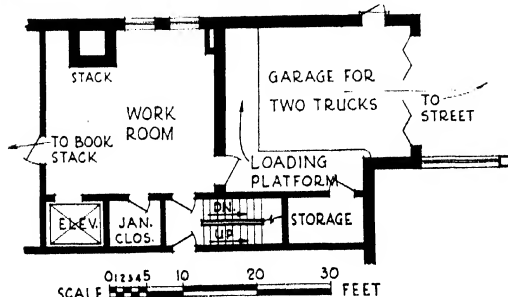
LEVEL SITE: SECOND FLOOR THE MAIN FLOOR

First Floor	Garage and Shipping Room	Bridgeport Mt. Vernon
First Floor	Shipping Room only	Blecker Dearborn Indianapolis Detroit Philadelphia

LEVEL SITE: FIRST FLOOR THE MAIN FLOOR

First Floor	Level Entrance Garage and Shipping Room	West Toledo Hild Branch Legler Branch Evansville Brooklyn
First Floor	Same, without Garage	Santa Barbara Pasadena Birmingham Concord
Basement	Ramp down for Trucks Garage and Shipping Room	Toledo
Basement	Same, without Garage	Redwood City Cleveland
Basement	Outside stairs down to Shipping Room	Carpenter Br. York Lake Forest High'd Pk. Mich. Fort Worth
Basement	Inside stairs down (also elevator or chute) Shipping Room	Berkeley Portland Knight Memorial Rochester

Shipping room, Legler Branch, Chicago. Two trucks can be loaded while standing in their places in garage, while sorting and make-up, with elevator and bookstack adjoining, concentrate the work of all engaged in this movement of books to and from a large regional branch to a chain of smaller branches and central.



Shipping room, Enoch Pratt Library, showing ramp and inside platform with two doors to outside covered loading platform. This is level with autotruck bodies. Daily deliveries to 26 branches, beside freight, express, mail, gift books, are handled. Extra desk for W.P.I. timekeeper who checks 160 extra persons coming through passage beyond further screen. Floor and ramp of Mastipave, asphalt mastic flooring, non-slip and resistant to hard usage.

BINDERY

The ordinary library's "bindery work" consists primarily of selecting books that are most in need of binding or rebinding, writing the instruction slip for each, making the invoices, packing and shipping them to an outside bindery which can meet standard A.L.A. specifications.

The bindery should have an upper floor location unless the basement is dry and bright. There is little reason why, however, with modern building development the basement room and its accessories cannot be made very attractive and efficient, with adequate diffused lighting to supplement plentiful daylight.

BINDING EQUIPMENT

Necessary equipment includes a roomy sink with hot and cold water; base and ceiling outlets for electric glue pots, electric hot plate if book call numbers are to be hand lettered in gold leaf; plenty of shelving and large work tables specially covered with linoleum. Large glued-up work boards of various sizes are also handy both for pasting and for moving piles of books from one process to another in a large room; when not in use they can be stood up in a rack on one side of the room.

An efficient workroom will have 10" or 12" shelves on every wall, plenty of 18" cupboards for supplies, roller racks for large rolls of bindery materials. Locate as near to the street level and shipping room as possible, subject to the requirements above, and, to reduce red tape and delay, regulate the flow of incoming and outgoing material so that books will remain there only a few days. "The most efficient binding or mending department is the one which has the fewest books standing on the shelves."

In small libraries where one person handles all the work, mending and binding will probably be done in a corner of a general workroom if space can be afforded on the main floor; or, as near as possible on a mezzanine or in the basement. Outside binding is essential for all except the largest libraries, leaving only simple work such as mending tears, inserting pages, recasing, mending backs, etc. Only small work tables 3 ft. or 4 ft. long for each worker, with supply cupboards, electric glue pot and wash-bowl, will be necessary for simple mending and for preparing books for the binder. See Diagram 1.

The publicity of certain supply companies during "unemployment," and lack of technical experience, have misled many small libraries into attempting by strips, hinges, and other materials, or by boring and sewing across the backs, to patch up books with loose stitching and covers, instead of sending them out to be properly resealed and recovered. Hundreds of thousands of reclaimable books have been thus ruined. A definite warning must be given against the idea of setting up a complete bindery in any public library except one of the very largest, where the volume of specialized work may warrant it. Better work—more promptly done and at lower prices—can be obtained from commercial library binders, using standard A.L.A. specifications which secure work of almost perfect uniformity at scales arrived at by competitive bidding. The library, without the competitive commercial incentives to economy, such as adequate supervision and speedup, is entirely out of the run-

ning on the bulk of resewing and rebinding. If really competent instruction is available, with intelligent careful relief workers who will remain at least a year, the covering of previously sewed books may be attempted, with sewing of secondary back periodical files. A glue pot, sewing bench, cutter, job backer, and press will be desirable. See Diagram 2.

In slightly larger libraries where books needing rebinding are sent out to commercial binders, but where mending is done on a larger scale and relief workers do not attempt sewing or recasing, a whole workroom may be given over to repairs or recovering. Equipment would include several work tables, book press, and glue pots, which would be adequate for rebacking, recasing, reinforcing, etc. See Diagram 3.

In cities of 100,000 up, there is a constant accumulation of valuable old and infrequently used books, including documents and early periodical files, which need binding and which cannot be handled within the regular budget for outside binding.

Such larger libraries, especially those where there is the possibility of additional help from capable, although untrained, unemployed workers, not on the library payroll, will provide themselves with such equipment as the following, depending upon the scale on which they plan to operate and on the permanence of the labor supply.

- Benches for hand-sewing

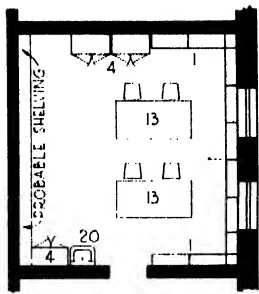
- Hand board-shears and power cutter

- Job or roller "backer"

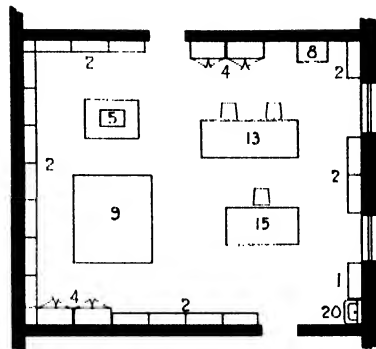
- Presses to hold new bound books tightly until the glue sets

- Lettering pallet and finishing stand

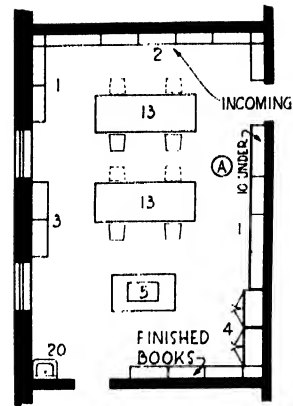
If such a room can be justified, the architect will provide necessary conduits, gas piping, and plug outlets in the floors, walls, and ceilings. Arrangements for such rooms are shown in Diagrams 4 and 5. In No. 4 no sewing or complete binding is handled, but recasing, rebacking, reinforcing and a large amount of mending. The heavy machinery (job backer, large floor press, and board shears) are placed in the



1-GENERAL WORKROOM IN SMALL LIBRARY LARGELY FOR MENDING.



2-WHERE SOME SEWING AND REBINDING IS DONE IN SMALLER LIBRARY PLUS MENDING.

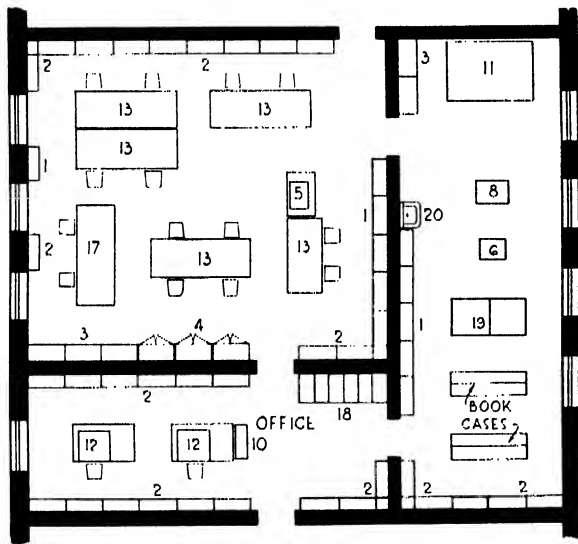


3-MENDING ROOM IN LARGER LIBRARY.

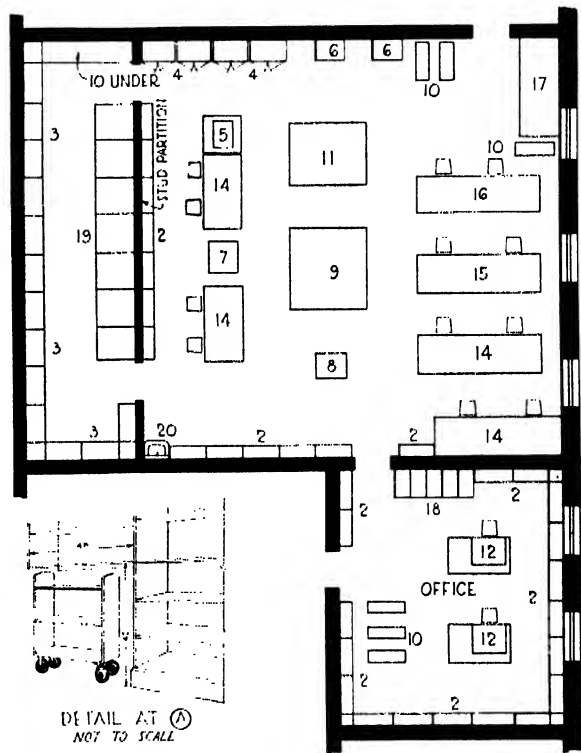
·KEY·

- | | |
|-----------------------|---------------------|
| 1-12" SUPPLY SHELVES | 11-BOARD SHEARS |
| 2-10" BOOK SHELVES | 12-DESK |
| 3-18" SUPPLY SHELVES | 13-WORK TABLE |
| 4-18" SUPPLY CUPBOARD | 14-MENDING TABLE |
| 5-SMALL PRESS | 15-SEWING TABLE |
| 6-LARGE PRESS | 16-FORWARDING TABLE |
| 7-WIRE STAPLER | 17-FINISHING TABLE |
| 8-JOB BACKER | 18-VERTICAL FILES |
| 9-CUTTER | 19-STORAGE RACK |
| 10-BOOK TRUCK | 20-LAVATORY |

SCALE 0 5 10 20 30 40 FEET



4-LARGE SHOP, HANDLING NO SEWING OR COMPLETE BINDING.



5-LARGE SHOP WITH MENDING & FULL BINDING.

adjoining room, along with the supplies and waiting bookstock. The plan shows this adjoining room equipped with windows, but this is not always possible in a large building, especially since this equipment is not continuously used. No. 5 shows a larger shop, equipped for full binding, but with the usual proportionate amount of mending. The binding equipment,

however, does not include the expensive over-sewing machine or a perforator since labor will not be at a premium and, in general, machine sewing is too complicated to undertake except in commercial binderies. The two mending tables to the left are for the miscellaneous mending, while the two tables near the windows are for the mending which precedes the binding.

Much space would be lost in creating a separate room, so the heavy machinery has to be located alongside the bench workers. Item 19 in the partitioned-off space is a rack constructed of vertical and horizontal 2 x 4's to support four shelves 3' wide and 18' long, placed respectively 6", 18", 30" and 42" above the floor, to hold a variety of large, flat supplies. It is not necessary to put such a bindery in a basement, for reinforcing can easily be included in an upper floor to carry all this machinery, the ceiling space below the supporting floor being blanketed with sound and shock absorbent to take the pounding, the rattle and crash of the paper cutter, etc., without disturbing staff or readers below.

PRINTING SHOP

Like the bindery, the printing shop is often located in the basement because of its heavy machinery, and because space on upper floors is needed for public and professional staff departments, books and services. The printing shop, with presses, cutter, type cases, etc., is found only in a few large libraries, some operated by relief workers. The large shop includes one or more small presses, foreman's desk, compositors' benches, cabinets or shelving for type and electrotypes, vertical files for job envelopes, etc. A smaller shop may include only a printing multi-graph, a folding machine, a paper cutter (the latter shared with the bindery). Either shop will have a washbowl and work tables.

The editor or editorial assistant may work in a room adjoining, undisturbed by the noise and confusion of the presses, on layout, typography, and proof-reading, but close at hand to see jobs through the shop. For him, a desk, several chairs, filing case and work table are needed.

Space with plentiful 36" shelves for storage of paper stock in the proximity of the printing shop is a necessity, and floor space for cases of paper, as handling paper outside of cases inevitably wastes much stock. As so few libraries

have such a shop the subject is left here. Local master printers can help lay out a special shop, but it should be done before the architect's plans are complete, to provide for all the floor connections and future equipment.

WORK WITH THE BLIND

Because work with blind people has gravitated toward the few centers authorized in the Federal annual appropriations for blind books, the subject is too specialized to warrant more than reference here. "In many libraries the blind are provided with a separate open-shelf reading room, and sometimes stories are told or books are read aloud to them at stated intervals. . . . Shelving is 15" high, 15" deep, three or four volumes per running foot, or an average of ten or twelve inches to a title." (Bostwick.)

MISCELLANEOUS

If a vacuum cleaning apparatus is installed, dust flues and compressed air machinery with openings on each floor of the stack and in the principal rooms in the main building will answer all purposes. Most libraries use cheaper and simpler portable equipment.

If a pneumatic tube system is installed, the base should be provided for in the basement; and also, if space is limited on other floors, a P.B.X. or inter-library dial phone equipment room.

If there is likely to be trouble from low water pressure, an engine should be provided to pump water into a tank placed on the roof. Another precaution is a fire pump in the basement. Automatic sump pumps should be installed in more buildings to take care of basement flooding.

It may be found economical as well as convenient in large systems where the budget permits, as at Philadelphia, to operate a small washing machine and laundry for the library's towels, etc. This is desirable only when janitress help costs less than outside contract work.

CHAPTER 21: EXHIBITION FEATURES IN LIBRARY BUILDINGS

IT is hardly necessary to set forth the importance of book exhibits in a public library's steady program of community service. Exhibits of books accompanied by other materials to which they relate—paintings and art objects, models and handicraft work, collections of hobby treasures resulting from travel or related to history, portraits, and mementoes of interesting persons—have very definite and appropriate objectives. They continuously stimulate those who pass to enter new, constructive mental and cultural fields; they stir curiosity and ambition. They are therefore a powerful factor in adult education and a stimulation to worth-while endeavor in every field. This is amply proved by the newspaper attention they receive. Exhibits tell the busy procession of passers-by that no matter what their own personal interests or problems may be, the library has books and periodicals bearing on each and every one.

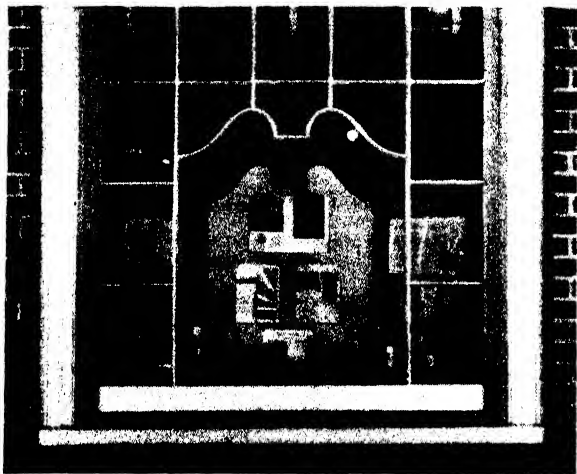
A community should learn that the daily spectacle of exhibits showing how books relate to every cultural interest, every art, craft and science, every manufacture, every civic undertaking and improvement, every problem of home, shop, store and office, every man's daily work, constitutes one of the library's greatest mediums for explaining itself. The building should therefore be equipped for exterior and interior exhibits.

EXHIBIT WINDOWS

Only a few buildings have been placed close to the sidewalk line, but of these, in recent years, several have seized the opportunity to show books to passers-by, notably Cleveland, Grand Rapids, the Chicago branches, Birmingham, and Baltimore. The Central Square Branch at Youngstown in 1923 may have been the first library building to be actually designed with such windows, though the idea was already used

in temporary quarters at St. Louis and Cleveland. In 1927 the West Side Branch at Grand Rapids set a new pattern by utilizing its location along the sidewalk. Its eight large windows were brought close to the ground so that pedestrians could look within, while simple exhibits of books and book jackets, prepared by the staff, occupied a small space at the bottom of each window, sometimes meagerly because the space is so great for a small staff to handle. The attractiveness and success of the Grand Rapids plan, and a unanimously favorable vote by a visiting committee of building owners and managers who met in 1930 to criticize the plans for the Baltimore building, gave support to officials who hesitated to approve the twelve great community show windows it was proposed to place along the sidewalk in the front of the Baltimore building. This exhibit provision has proved one of the library's greatest assets. A folder with dimensions, etc., is available. The total salary expense is approximately \$3,800 annually for a program of more than 500 interior and exterior exhibits each year. They reach many more citizens than all local museums combined, each exhibit stimulating the appreciation of the value of books.

People will spend more time before a display a little below the average eye level than one which requires stooping or looking up. The floor of a window should be approximately 30 to 35 inches above the sidewalk level, the top not over 72 to 78 inches above; for children 66 inches maximum. Depth may be anywhere from 18 to 30 inches depending upon the amount of space available and on whether the exhibits are to include all sorts of borrowed material to accompany the library books. The printed text of display books cannot be comfortably read more than 24-30 inches from the eye (not from the glass). Those who will undertake more elab-



At York, Pa., there are four sidewalk windows. The panel background screens stand back 18" on the floor of the rooms inside, high enough to prevent meddling. F. G. Dempwolf, architect. 1935.

orate exhibits of borrowed objects to be displayed with the library books will find one or two deeper windows desirable.

Lighting is important; it must not spotlight the center or the foreground and leave the rest in shadow. In a shallow case, even glass shelves and the objects resting on them may interfere with overhead illumination, so side lighting may be necessary. Lumiline tubes in reflectors are generally used.

High voltage fluorescent tubes of small diameter (15 mm) and appropriate length will give effective showcase lighting, especially if reinforced by alzak aluminum or porcelain enamel reflectors. Standard lengths are 1', 2', 4', and 6', and it will be economical to purchase these and make the necessary couplings rather than to purchase special lengths.

Ventilation is essential to avoid overheating and damaging the exhibits.

Polished wood floors are easily scratched, and leaks or spills may cause warping and spotting. A composition floor of a neutral color, not conflicting with objects or colors on display, may be better.

The back should be neutral in color, of cork or other soft material that will take thumbtacks and permit showing posters as a background

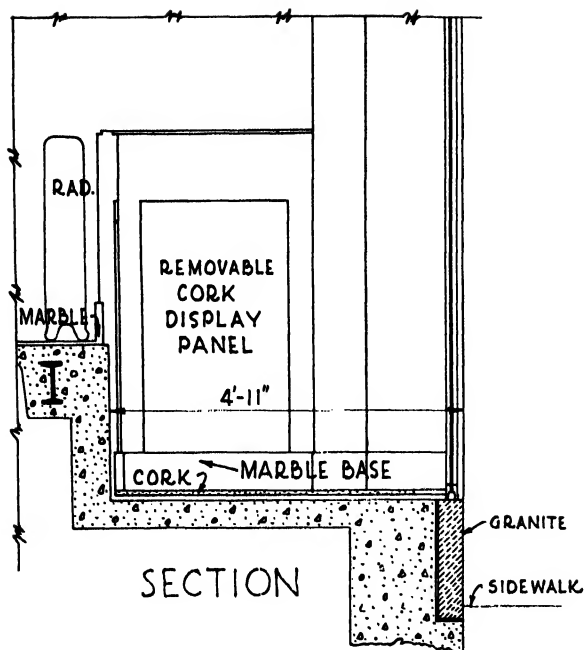
for the exhibit material, though backgrounds may be installed on large movable free-standing screens. Exhibit workers are well aware that selected posters, large colored picture cutouts and other colored flat work get attention.

When window washers' schedules require cleaning the glass above window exhibits, these may be sheltered temporarily by a sheet of Masonite tacked to a light pine frame and cut to fit snugly against the glass and around the mullions, its ends supported on the top of the exhibit window housing. This equipment catches all dust and water drops and makes it possible to plan exhibit schedules independent of window washing.

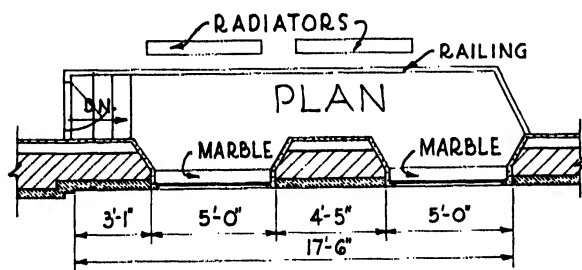
As a protection from the sun's rays, inconspicuous awnings in keeping with the architecture may be employed, or the material may be shown behind pieces of actinic glass or yellow cellophane. The former costs \$10 per sq. ft., weighs 6½ lb. per sq. ft. Maximum size 40" x 72". As excessive heat is hard on the exhibits,

To the right of the main entrance of the Hild Branch, Chicago, two windows, each five feet wide, have been brought down near sidewalk level; space large enough for furniture and other large settings for the books. Inlaid linoleum flooring. Pressed cork back panel. Cleats were later installed so that temporary backgrounds like this painted Venetian blind, could be slid into place from above. A supply of wooden boxes of various sizes and shapes, black enamelled, help build up the displays. Two showcases, 39" x 17", equipped with plate glass shelving are recessed at sides of entrance (see diagrams).





Hild Branch, Chicago, exhibit cases; sidewalk cases above, entrance cases below.



radiators should not be placed in or under these windows, unless the hot air currents are diverted along the walls and glass front.

Access for installing and cleaning should be provided at the back. Either the door should be of ample size, or the entire back removable, or arranged to open in sections.

Drawer space should be provided below or at the back or sides of the windows for storing small fixtures; electric sockets on both sides and at the back of the windows rather than on only one side, for unobtrusively connecting and easily adjusting electrically operated objects; a step arrangement whereby windows can be entered without the aid of a stool or stepladder.

It is well to plan exhibit windows so they

need not be opened to ventilate the adjoining department; dust and wind can work havoc. Windows reached through reading rooms, work-room or office are an annoyance while exhibits are being installed, but their value is so great it outweighs such difficulties. This trouble may be avoided in reading rooms by installing the exhibits early in the morning.

OUTDOOR CASES ALONG THE LOT LINE

Unfortunately for exhibit enthusiasts, only a few libraries have been planned with sufficient understanding of their purpose to bring them out to the sidewalk line. The usual problem is to provide, as an afterthought, exhibit cases to attract readers into a library which stands back some distance from the street.

Outdoor cases may be erected on cement or stone bases, or designed as a part of the balustrade or coping along the library lot, or built into a fence if there is one. Any outside case must harmonize with the building exterior; we have found few examples satisfactory either in architectural design or in detail of construction.

It is no easy matter to design the roof and its connection with the four walls so there are no leaks. In fact we have not been able to find one. Moisture or haze on the inside of the glass is prevented by ventilation, and in freezing weather by an electric light and the warm air from it circulated by an electric fan. At Monroe Branch, Rochester, the outside exhibition case, built in the stone work of the sidewalk balustrade, has given so much trouble with sweating in winter and frost on the glass that it has had to be discontinued for exhibit purposes. A properly designed electric-lighted case, with adjustable and removable shelves, provides for a variety of exhibits. Its interior space should be at least 3' or 4' long, 15" to 18" deep, and 2' to 3' high, its center 6" or 8" below average eye height. The back and sides should be lined with cork or a waterproof composition that will not buckle in wet weather, preferably separated from the structural back, with air space between.



"Library Windows" of Baltimore. One of twelve ten-foot exhibit windows along the sidewalk. Reconciling these with certain architectural requirements of the façade suggested the bay window form. The three divisions complicate the planning and installation somewhat, but avoid the department-store expression and achieve a definite intimacy in character. Exhibits on every conceivable subject with related books, are installed every three weeks. Back paneling 28 inches high with plate glass above. Two windows are deeper than shown, for furniture or demonstrations. Clyde N. Friz and Nelson Friz, architects. E. L. Tilton and A. M. Githens, associate and consulting architects. 1933. Photo, Arthur H. Goldsborough.

INDOOR CASES

Future buildings will no doubt be well equipped with interior exhibit cases designed as a part of the wall. They are not appropriate in reading rooms where quiet is desirable, but they may begin at the entrance and be installed where possible in the general circulation room and in corridors. Such passages may be made more interesting by display devices if the style and expense are in keeping with the dignity of the hall in question. Cleveland's recessed bronze-

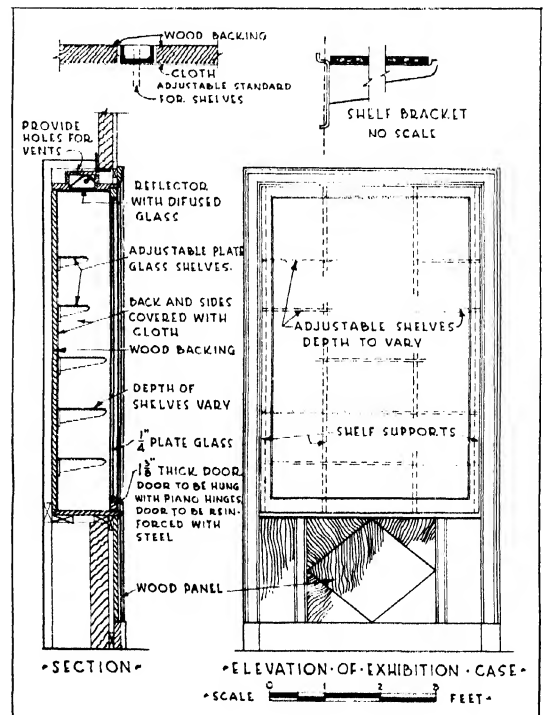
finished electric-lighted exhibit cases, or those in the long main corridor at Houston, are thoroughly appropriate. Baltimore copied Cleveland's. Exhibits of this sort, incidentally, distract attention from distances to be walked.

BULLETIN BOARDS

In the corridor walls of the Cleveland Library, beside the deeper cases, there are glass-covered bulletins, only an inch or two deep, each 32 inches by 49, to display plates, photographs, maps or textiles, besides posters and announcements.

Plentiful bulletin boards for notices, book-lists, query lists, book jackets, special reading notes; announcements of lectures or exhibits, all adequately labeled, give a library the air of "something going on," especially if illuminated throughout *all* the library hours, and longer if they are on the exterior. Their placement must

Details of lighted exhibition cases sunk in the corridor walls at Rochester, N. Y., showing adjustable shelf brackets.

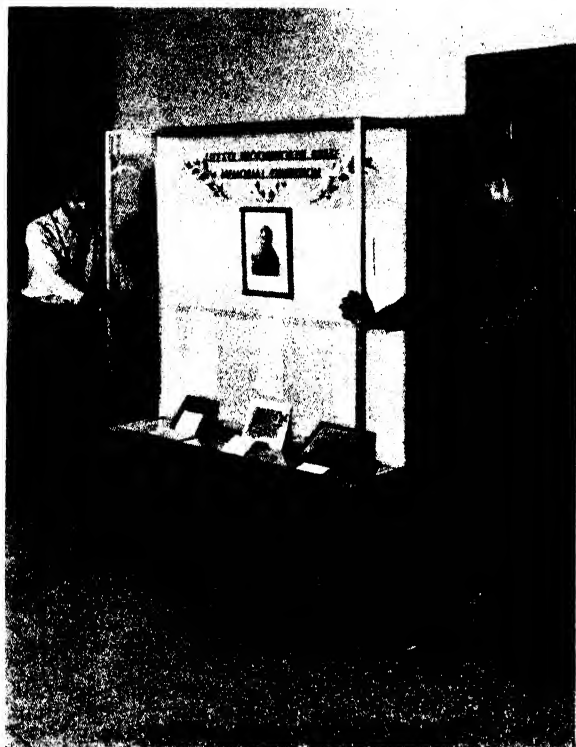


not mar the beauty of the building. The correct height to be easily read from the floor is the area between 36 and 72 inches. Frames may be of wood or metal in harmony with the trim and furniture of the room. Cork linoleum forms a good background. Clear, soft white pine covered with burlap is as satisfactory as any wood.

FLOOR CASES

The accompanying illustrations show a few successful interior adult cases, both built-in and free-standing. Of the latter, bronze, aluminum, or brass chromium plated with a dull finish, dust proof and properly ventilated are of course most satisfactory, but wood-framed cases are very welcome in the smaller library. The expense of setting up exhibits is lessened by the provision of such fixtures as picture molding across the backboard, adjustable glass shelves, across the backboard, adjustable glass shelves,

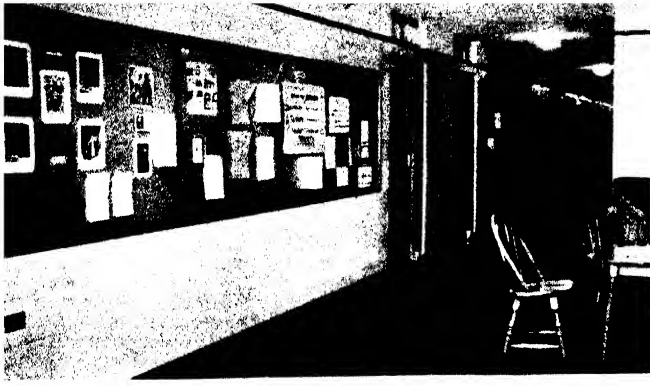
Cases equipped with several glass shelves and with books and fragile art objects installed, are easily moved from exhibit workroom to their places in the building, on ball-bearing "dollies," thus saving much time for the preparators and enabling a large number of cases to be made ready for public view at one time.



One of several recessed exhibit cases at Los Angeles. Total height 7' 9", width 6' 10", depth 21". Bottom of show case 20" above floor. Interior lined with black velvet, over wood. Metal vertical strips for adjusting glass shelves. The exhibit is set up from the front, the heavy plate glass being in two sheets on ball-bearing rollers, and locked in center. Note locked supply drawer beneath.

crash-covered or enameled blocks of various sizes, wooden easels, strips of plate glass for weights, etc. Two sets of display equipment, one modernistic for exhibits of a modernistic nature, will prove helpful. Valances diminish the height, and draw curtains soften the plain lines of framework and can be partly drawn to "highlight" a single exhibit. Lighting should be adequate and concealed along the front, top and sides, preferably in troughs, with provision for change of lamps and ventilation.

It is desirable that vertical, free-standing museum cases open wide from the front or back, to facilitate arrangement of displays. Cases should be so constructed that they will not tip over when the doors are open. A small wooden horse, just high enough, may be slipped under the open door to take the heavy weight. Plain metal cases with a sloping front of glass on low



Long corridors in the Library at Columbia University are utilized for continuous cork bulletin boards, 40" high, the bottom 34" from the floor, ranging in length from 2' to over 20', with a total length of 153'.

bookcases are used to good effect between the windows in the John G. White room at Cleveland. The more usual show case is the rectangular table type, with flat-topped frame of metal or wood. Large cases have the advantage over small ones in that they permit a more comprehensive showing of material, and thereby arouse greater interest. On the other hand, small cases require less space, and in libraries already crowded may be set on reading tables or on shelves. Double locks protect more valuable and fragile items exhibited, *i.e.*, beside the ordinary key lock in the middle, extra locks at top and bottom of doors keep them secure and make the case more rigid.

STANDS AND COUNTER BOOKRACKS AND TROUGHS

The most cogent appeal to readers is the actual presence of the book itself. There is no better substitute for the personal promotion that busy librarians cannot always give, than displays of selected books on a given subject attractively arranged for readers to handle.

For indoor displays, standard equipment of various sorts is available, or may be designed to fit a particular need and attached to other furniture or left free-standing: tables with flat or sloping tops; low bookcases; book troughs to hold a half dozen to a score of books at one time; movable stands with double posting surface that can be moved to the point where attention value is greatest (stands of small capacity are more successful than large ones); wooden floor or counter stands for individual books.

Flat or sloping tops on low bookcases will also provide book display. To concentrate attention on one or on several books, the ends of bookcases which project into the room can be brought into service with a small specially built-in shelf or trough.

In the Popular Library room at Baltimore, standing floor racks of 200 volume capacity show three or four separate subjects simultaneously. The shelves of these cases are pitched at a 20-degree angle to present the back of the books to the reader's eye. Other small display racks hold approximately 12 volumes on a single shelf pitched at a slight angle. These have a narrow cork-linoleum panel in front for the display caption. See display diagrams in Ch. 42.

The Charles Deering Library, Northwestern University, encourages the use of books by placing display cases in the card catalog area at the end of each of the four consulting tables. These are of oak with two sloping shelves, so that titles can be read from either a standing or sitting position. Comfortable chairs nearby are nearly always occupied by students reading or glancing through the books on display. These books circulate so rapidly that additions are sometimes made three times a day.

WORKROOMS

Well-lighted exhibit workroom is essential; materials must be gathered, laid out, made ready, labeled, set up in preliminary shape, and then moved to the right point. Plenty of rough work table space and floor space are main requirements. The program at Baltimore requires about 1000 sq. ft. floor space, with telephone connections.

A schedule and drawings of exhibit furniture used in the Cleveland, Los Angeles and Baltimore libraries may be borrowed from their respective librarians; from the latter, a list of items for an exhibits workbook.¹

¹ For many new ideas on the preparation of large displays, see R. P. Shaw. *Exhibition Techniques*, 131 p. New York Museum of Science and Industry, 1940.

CHAPTER 22: LECTURE ROOMS, MUSEUMS; LIBRARIES IN COMMUNITY BUILDINGS

TO AVOID the appearance of an inconsistency in many statements and suggestions in this chapter, a brief should be presented for two opposing groups of librarians. One comprises those who, going back to the ideas of Andrew Carnegie, when he was giving library buildings back in the 'nineties, believe that the library should be the cultural center of the community; that all socially constructive meetings, lectures, public forums, amateur plays, musical programs, exhibitions, even museum activities, may appropriately find a place in the library building; that one building combining many allied uses implies a degree of economy in their housing and operation; and that the social and cultural needs of the community are so obvious to the librarian, so appealing in their variety, and suggest so many relationships with the library staff and its books, that any "community-minded" librarian must consider seriously the obligation to house and encourage such worthy functions.

Against this socially minded and inclusive program, there is another group of librarians, equal or greater in number, and the authors of this book are among them, who feel that though all such activities deserve every aid that time and money will permit, and though from sheer necessity they are sometimes permissible in a small-town library building, they are not proper library activities and are detrimental to the library, when housed in and seemingly a part of the library. Unless they are on a separate budget and the library budget itself is at least \$1.00 per capita, they divert funds from the library's primary functions in the form of building costs, heat, light, maintenance. They also absorb precious time on the part of the staff and bring in crowds of people with noise and confusion. They delude the community into thinking that all sorts of good activities are somehow

"library work," a delusion which a librarian will challenge for the fundamental reason that crowds, groups, meetings, mass learning not from books and print, all conflict with the idea of quiet, individual reading, study and thinking, which it is the library's chief purpose to promote. A librarian is not narrow-minded who is concerned for books, reading and study in a world more and more impelled to group and mass activity.

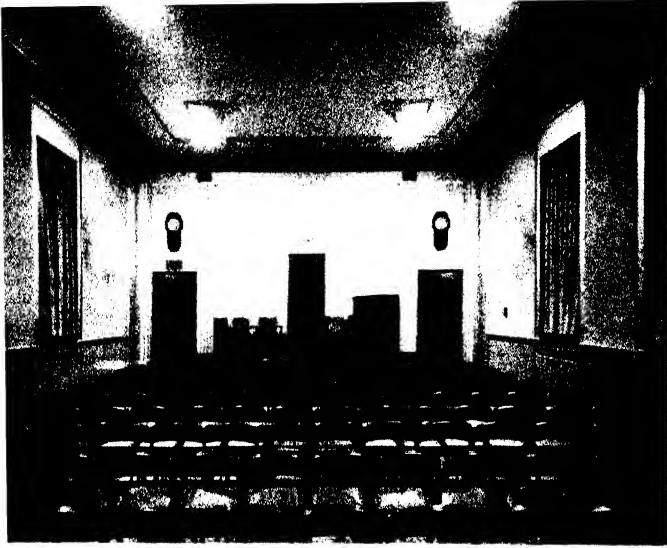
Such activities are sometimes classified under the library's so-called Adult Education; but there is seldom money enough to buy books, hire library assistants, and carry on effective reference service. Why, then, divert some of it to other purposes, excellent though they are?

A Western librarian presenting to city officials his very good case for an appropriation above the usual per-capita standard, expresses his library's perpetual predicament: "to make it worse, our library appropriation is an undivided lump sum for libraries, museum and art gallery, all under the Library Board, and known collectively as 'The Library Department.'"

True, in establishing and in getting building funds a bribe must sometimes be given to satisfy those who are not convinced that books, reading, and study are worth while. The advocates of a branch in one city were willing even to combine it with a moving-picture house (at the suggestion of the latter's promoters) in order to capitalize on the popularity which the movie would have, and the library's respectability and likelihood of receiving a building permit!

Because so many buildings provide such rooms, and because there will always be new buildings that provide some of them, we must describe these "extra-curricular" provisions. They are sure to be a detriment to library service unless:

(a) the library is in a small community;



Lecture Room at Faneuil Branch Library, Boston, with movable chairs. Note heavy fold curtains which absorb noise and keep out light during stereopticon lectures. Kilham, Hopkins and Greeley, architects. 1932.

(b) the library is well and permanently financed above the standard \$1.00 per capita for the library work itself;

(c) the time and attention of the librarian and his staff will not be diverted from the knowledge and promotion of books;

(d) the location and access to these extra rooms will never affect in any way the convenience, the quiet and the complete satisfaction of those who use the library building as a library and not as something else.

CLUB, MEETING AND LECTURE ROOMS

Ordinarily they are placed in the basement, for basement space is not desirable for daytime activities and is difficult to utilize for major library purposes for lack of daylight. Occasionally they are placed on the second floor. Meetings come only at intervals, usually at night; the meeting room may be reached by an outer entrance, and its housing may not add greatly to operating costs, especially if a small fee is charged for light, heat and janitor cost.

Time and administrative problems are also involved in handling meeting rooms. Good will is sometimes out-balanced by ill will from organizations not approved. Library magazines frequently print controversial letters as to discrimination against such meetings, as though

meetings were a main issue in library work.¹

In an industrial or congested neighborhood, even with separate entrance, such meetings engender noise, sharp cries, and disorder which annoy readers and are utterly inappropriate.

"Chaperonage in this sort of a neighborhood is terrific; we could not have handled it at all without the International Institute supervision. I am opposed to such a location of separate entrances and large auditoriums. Small club-rooms on the main floor are much more practical." This illustrates the length to which librarians allow themselves to go, here proposing to utilize highly valuable main floor space to serve as a social center. Some of the branches in Boston and several other cities have shown how quickly reader and book space become inadequate in competition with main-floor club rooms.

Says a decidedly socially minded West Coast librarian, "We do not feel that the library gains any particular benefit from the use of these meeting rooms, as far as the use of books is concerned." The librarian in one of the largest American cities says, "The library has always considered itself fortunate that the central building, planned 40 years ago, is without assembly rooms, since conflict and argument as to the merits of applications is thus avoided. In our newer branch buildings there is usually an assembly room. We have grave doubts whether the value to the library outweighs the difficulties."

As the late E. L. Tilton noted in discussing a building of 420,000 cubic feet with a total cost of \$300,000, the lecture room is likely to make the least return for the money. It need not in this building accommodate more than 125-150 seats, allowing 8-10 square feet per seat, including aisles and platform square. The cubic content of such a room with a 12 ft. ceiling would be 18,000, and at 50¢ (the cubic foot cost of the building) would represent \$9,000 investment,

¹See also Settelmayer, *Reports on Assembly Rooms in Large Public Libraries*. Unpublished library school thesis. 1936. University of Illinois. The various quotations in this chapter, except as otherwise noted, were taken from letters received from various librarians.

which at 6% would be \$540, to which must be added the cost of light, heat, and janitor labor. "It is usually better economy to hire a hall in a neighborhood for lectures and entertainments and to omit such a room from a library, or at least reduce it to very small dimensions."²

Examples: In a number of library buildings the placement of the lecture room has been definitely planned so that after a number of years, with increase in service and staff, it may be taken over by the children's department, and the children's room moved to the basement, to occupy the vacated space; *e.g.*, at the Sprague Br., Salt Lake City. The idea seems practical, but it should pass the tests of basement children's rooms outlined in Ch. 16 for daylight, ceiling height, attractive approach.

In a combined reading room and meeting room at Mattapan Br., Boston, shelving is equipped with rolling screens, locked at the bottom, or other devices, so that during public meetings the books can be covered to prevent theft. The platform can be removed, and the room used for general gatherings as well as lectures.

Few library basements have been worked into such satisfactory, well proportioned assembly rooms as that at Pleasant Ridge Br., Cincinnati. The large complete rectangle is kept intact, with adequate stage and stairway; and the usual disfiguring steam pipes placed out of sight under the first floor bookcases; yet this large room has proved unnecessary. "When erected a few years ago, it was thought well justified, but with the rapid building up of the community and other provision for large meetings, the room has not the use we had hoped, whereas a smaller meeting room in the same building is in constant demand for adult committee and small club meetings."

In the Los Angeles Branches (see Ch. 24 and 25) the provision for clubs and small assemblies was made directly on the main floor where library space is at such a premium.

²F. L. Tilton, "Library planning," *Arch. Forum*, 47:497-506, Dec., 1927.

On the other hand, in the central buildings at Los Angeles and some other large cities frequent large meetings are held, having to do directly with books and libraries and their use, and so warrant having an adequate lecture room on an upper floor. California and some other sections have been especially active in their group and public lecture programs and have made more generous provision than elsewhere. Los Angeles in its central lecture room (seating 425) and the smaller seminar room adjoining, holds 500 to 600 lectures and meetings a year with combined attendance of 150,000 to 200,000. At Pasadena, the auditorium, with 300 seats, is situated at the west end of the circulation hall and is much used for meetings and exhibits. It is closed from the main part of the library by a lobby with double doorways draped with quieting velvet curtains, has sound-proof walls and a separate outside entrance. There is a lecture platform and moving-picture apparatus; the folding chairs are removed from the room if necessary.

LECTURE ROOM SEATING AND EQUIPMENT

The accompanying diagrams show seat and aisle spacing, for estimating the size of lecture rooms. The following check list is suggestive: stage, for lectures only, or with wings, curtain backdrop and dressing rooms, for plays; special floor, ceiling, and wing lighting. Possible storage of folding chairs under stage, or through trapdoor. Booth or platform at rear with wiring for movie machine or stereopticon. If no change in future use is likely and the room is to be used only for meetings, sloping floor and fixed chairs with upholstered seats or backs, or both; otherwise level floor, and chairs of the folding variety, preferably in units of two or three, to prevent their sliding out of place. A sloping floor generally requires extra ceiling height. Sound-absorbing ceiling and walls particularly desirable. Ventilation and air conditioning for this room on a separate circuit. Dark window drapes to shut out all window light leaks during stereopticon lectures. Clock on side wall

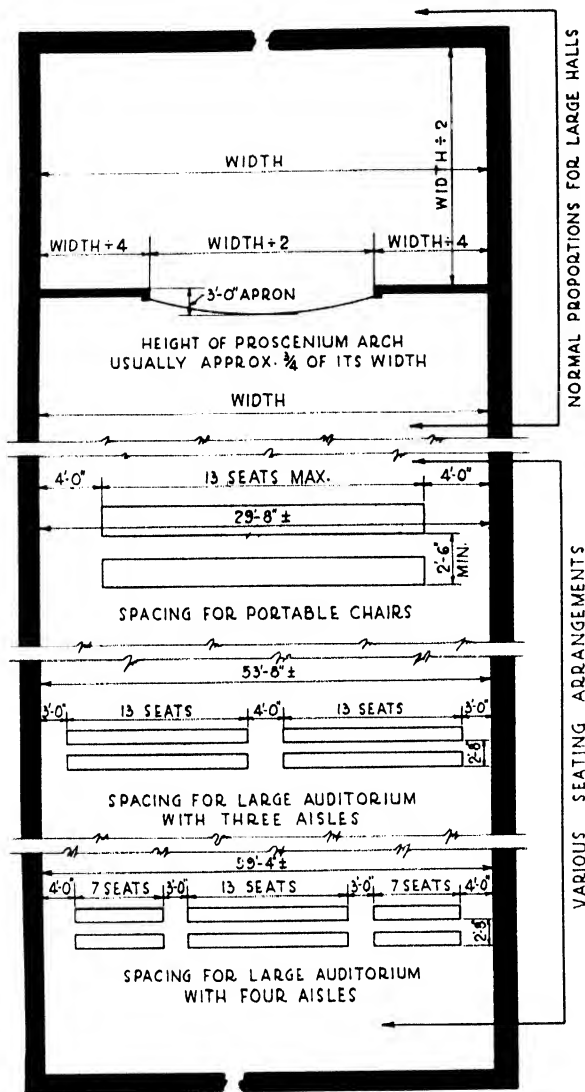


Diagram showing standard dimensions for lecture halls, with those proportions shown at stage end of diagram taken from large auditoriums but applicable to lecture halls and seating arrangements taken from three different size rooms, showing proper spacing, aisle widths, etc. Therefore, diagram is not drawn to scale.

near front. Doors located to avoid disturbing speakers. Reading stand with floor plug connection.

STANDARDS FOR MEETING ROOMS³

Length—Usually twice the width; bad to have more than three times the width. Normal voice audible 75 ft.

Easy exits (on several sides where possible).

Total exit widths controlled by number of seats (and local code).

Doors fitted with panic bolts, to open out.

Access from street for community use, without opening rest of building.

Services desirable: check room, small storage room, washroom, toilet.

Definite space for music—piano, electric organ, radio, victrola.

Platform two or three steps high.

Stage suitable for stage presentations? If so, footlights, heavy draw curtain, movable wings, back curtain or drop.

Assembly room chairs: portable or fastened to floor. Spacings:

Width center to center	Height from floor	One back to next back
1'-6" min.	Seat 1'-5" to 1'-6"	2'-6" min.
1'-8" usual	Back 2'-7" to 2'-8"	2'-8" usual
1'-10" ample		2'-10" ample

Approx. seat allowances: 6 to 7 sq. ft. per person on straight rows, 7 to 8 sq. ft. on curved rows; these allowances sufficient to include a small platform.

Maximum no. of seats between aisles—13. 8 to 10 better.

A small room up to 28' to 30' is best arranged with a 4' aisle along each wall and up to 13 seats in a row.

A center aisle is not recommended; 2 aisles better, but more than 2 or 3 seats next to the wall are objectionable.

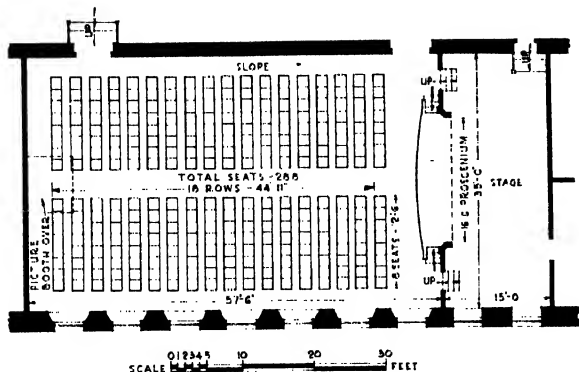
Main aisles should be straight, 3' minimum width.

Side aisles 2' minimum width.

Gradient or floor pitch is desirable if room is long, but limits its use for other purposes.

Lighting—Indirect or flush-lens lighting will avoid the glare of exposed fixtures which face speakers and audience in the usual lecture room.

³Arch. Forum, 62:83-4, Jan., 1935; Amer. Arch., 133:65-6, Oct., 1930; 151:87-97, Oct., 1937; C. G. Ramsey and H. R. Sleeper, *Architectural Graphic Standards*, 2d ed., N. Y., 1936.



Typical auditorium in a large library building, with deep stage which can be used for amateur productions and programs in which several persons participate. Lecture-room chairs (288) bolted to concrete floor, leather upholstered tip-up seats and three-ply curved backs. Spacing shown accommodates crowds comfortably. Floor slopes eighteen inches to the front. A greater pitch would be desirable but it is hard to obtain in a library building, where floor levels should be uniform and not raised to take care of the extra ceiling height that would be needed.

Connections for lecturer's stand, footlights, floodlights.

Dimmer control for general illumination, to give reduced light during parts of program.

Exit lighting wired also on emergency exit circuit, in case of blowouts during meeting.

If a lecture room is to be used for exhibits it should be equipped with properly located lighting for both purposes, with two sets of circuits. Projection booth:

If 16mm. only, booth desirable but not neces-

sary. Film, if non-inflammable, can be stored in library.

If 35mm., fireproof ventilated booth. Film storage impracticable.

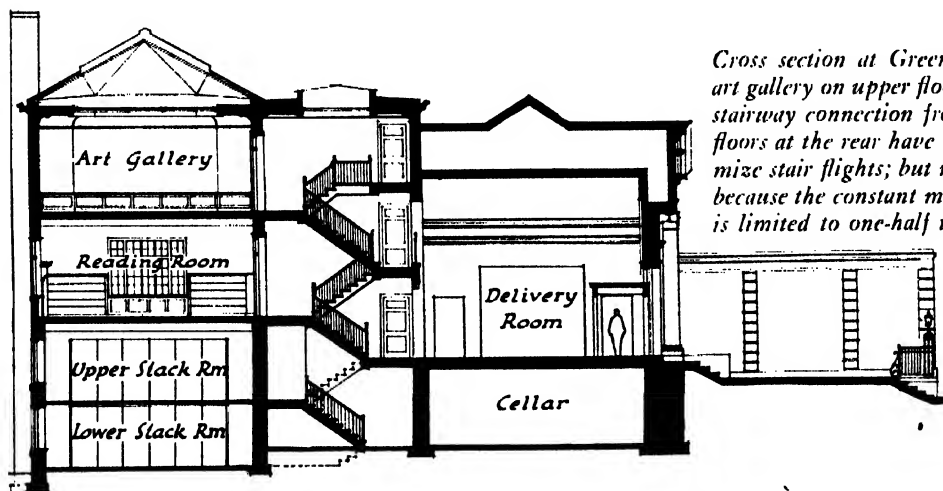
ACOUSTICS

Ordinary plaster surface absorbs only about 3% of the sound energy; the other 97% is reflected. Therefore in designing, sound absorption must be considered, and the various types of acoustical treatments studied. Acoustic tile ceiling and walls and heavy drapes at windows are desirable. A large audience itself improves the acoustics of a room. Seats upholstered in a heavy pile fabric are natural sound absorbents, but do not keep their appearance as long as an imitation leather finish.

GALLERIES AND MUSEUMS

There are numerous examples of library buildings given with the proviso that a gallery or museum be included. Endowment funds for some have been provided so that their maintenance does not compete with the library's from a common source of tax support. Among libraries having art galleries are Riverside, Ill., and Winchester, Mass., beside Haish Library at DeKalb, Ill., and Greenwich, Conn.

The proper arrangement of space for museums is of course a subject by itself, and has its own literature.



Cross section at Greenwich, Conn., showing art gallery on upper floor with skylighting and stairway connection from front entrance. The floors at the rear have been staggered to minimize stair flights; but more is lost than gained because the constant movement of book trucks is limited to one-half the floor area. It is bad practice to have stack floors not leveling with delivery room floor. William B. Tubby, architect. Courtesy of "Architectural Forum."



Haish Memorial Library, DeKalb, Ill. Gallery wing at right with its own separate entrance. Access to the library from it is by a short connecting vestibule with double doors. White and Weber, architects. Hedrick-Blessing, photo.

The exhibition of paintings and other works of art, of science and natural history material, and indeed of all sorts of objects reflecting individual group, cultural, industrial, or purely recreational interests in the community, may be justified, when the following conditions are met: (a) The material is borrowed, not kept, (b) The library is not thought of as either art gallery or museum, (c) The material is exhibited with books on the same subjects, or the use of books brought out, (d) The exhibiting arranged so that those who come shall not disturb readers, (e) Little expense is involved. In ordinary cases these conditions rule out a separate museum room.

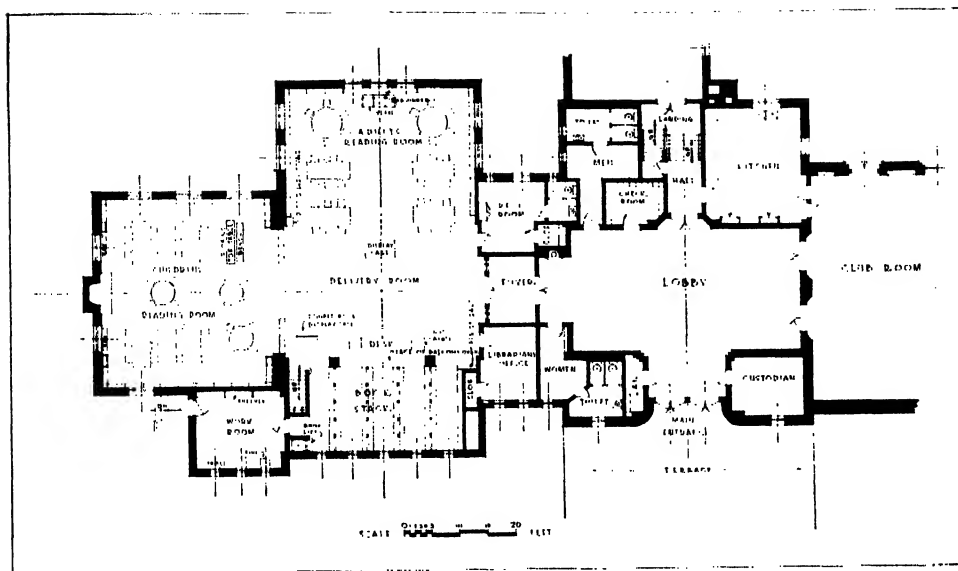
We quote Yust's "Follies in Library Planning."⁴ "Fifty years of experience have proven it fallacious that a library and a museum can both

flourish under the same roof. Such arrangement ultimately produces either a museumized library or a librified museum. One is pretty sure to crowd the other out, or one or both will be dead." Yust's ideas were reinforced by data he gathered in 1931 from librarians in 35 cities of 200,000 population upward. Some libraries had tried and discontinued it, eight then experiencing it pointed out its evils, and all who replied were opposed to the combination.⁵

Museum officials also cry for adequate separate buildings. In England an official surveyor found that a third of the more than 260 municipal museums he saw were connected with the libraries: "the Museums Association has for a

⁴*A.L.A. Bul.*, 20:522, Oct., 1926

⁵Unpublished report to Trustees, Rochester Public Library Board minutes, Nov. 2, 1931.



McKinley Branch, Sacramento, Cal., is on the main floor of a community building and close to the entrance. Where a library can be as convenient as this to a main street, in a busy neighborhood, and adequately planned in its own wing, it is more fortunate than usual.

long time urged that the two services are entirely distinct in character.”⁶ Here again the pressure to provide two things in one, sometimes based on dire necessity or seemingly good arguments, may be commanded in a bequest or gift, but it can seldom work out satisfactorily except for a brief period definitely limited in the original contract.⁷

⁶*Lib. Assoc. Rec.*, 1:73, Mar., 1934.

⁷L. V. Coleman, *The Museum in America*, 1939, v.1:113-114. An excellent summary of the problem from the museum viewpoint.

⁸S. T. Smith, “Libraries in community buildings,” *A.L.A. Bul.*, 28:233-38, May, 1934.

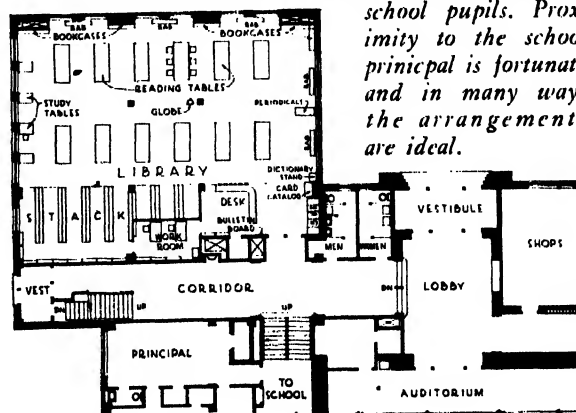
⁹N. L. Engelhardt and N. L. Engelhardt, Jr., *Planning the Community School*, N. Y., 1940. The library chapter evinces a keen interest in library service to students, both children and adults. There is, however, a better understanding of the value of providing library materials other than books, than of the scope and extent of basic library functions. The authors imply, but do not make clear, that placing the community library on the first floor of a community building is absolutely essential. Nothing is said about the necessity for a central location of the school house itself; nothing about the problems of administration and organization of the library, particularly the need for sticking to fundamental circulating services and reference work—for individual, unregimented reading and study. These things **MUST** be considered from the standpoint both of attracting the greatest number of users, and of providing the most convenient interior arrangement.

Many of the plans shown provide unfortunately small library space compared with that for arenas, auditoriums, swimming pools, gymnasiums, musical programs, forums.

LIBRARIES IN COMMUNITY BUILDINGS

Difficulties in financing a library building in a small community, and the occasional cases where some large general building is planned for several community purposes, arousing widespread fervor and a “togetherness” which attracts all groups, may give sufficient reason for including the library in the community building.^{8, 9} The advantages of consolidating expenditures and accessibility to the crowds depend not only upon the location of the community

Library room in community building at Greendale, Wis., built by U. S. Resettlement Administration, is well housed in a wing, giving generous light on three sides. The rear of the room is devoted to floor stacks, delivery desk and an adjoining workroom, all controlling the special library entrance which opens directly onto a main corridor. This in turn is reached by the main vestibule and also by a secondary vestibule used by school pupils. Proximity to the school principal and in many ways the arrangements are ideal.



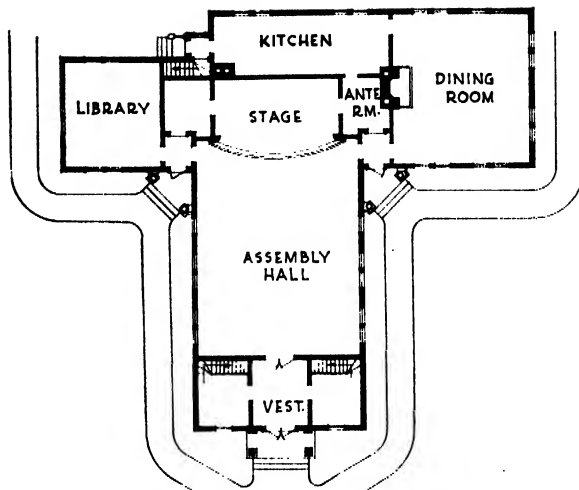
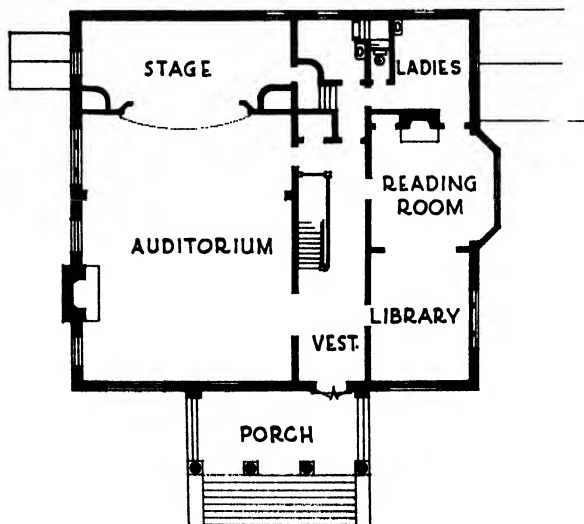
building but on the location of the library within the building. The first conflict comes when the different organizations compete for the ground floor, despite the noise and confusion so marked on the lower levels.

The North Berkeley Branch, Cal., is an example of a library in a park. Park branches are not often profitable; there is too long a walk from the thoroughfare or from the center of residence areas. Park activities are not usual in the evening or in winter, and seldom is the patronage heavy enough to justify building and staff expense. A free site may prove a delusion.

Many village combinations are found: the best known being with the women's club and supported in some cases by taxes and in others by the club. In one case where the library is on the main floor with club rooms and auditorium above, noise and commotion overhead are most objectionable. "Public affairs take precedence over any claims of the readers."

Several cases are cited, however, where community buildings are well located, the library quickly reached on main floor, crowds of people passing and fine quarters provided, e.g., Pleasanton, Cal.; Moorestown, N. J.; Hershey,

The Community Building at Wilder, Vermont, which has 300 population, cost \$12,000 by gifts and was built in 1899. It includes a swimming pool and bowling alleys in the basement and gives the library attractive, well-lighted space at one side.



At Bolton, Connecticut, population 500, the Village Hall cost \$9,000 from contributions and was built in 1913. The library is supported by village taxes. While it is assigned less space in proportion than in the Wilder Building, it has its own separate entrance with light on three sides. From U. S. Farmers' Bulletin, 1173.

Pa. Whenever such a combination is attempted, the librarian should join in planning the location, access, arrangement and equipment, otherwise library and reader interests are overlooked.

COMBINATION OF COLLEGE AND PUBLIC LIBRARY

Years ago, Oberlin, Ohio, created what was probably the first example of a combined public and college library building, conveniently located to the townspeople as well as the campus.

In 1940 the Chattanooga, Tenn., Public Library and the University of Chattanooga opened a \$300,000 building (William Crutchfield and Holbert Law, architects), financed by city, county, and PWA; two thirds of the space occupied by the public library and one third by the university library. Each library is administered independently by its own librarian and board of directors, but the arrangement permits an easy interchange of service, especially the adult non-fiction collection. An auditorium for 300 is used jointly by the University and by the Public Library. There is a double garage for the two book trucks which serve fifty-one county branches. The public and county system lends approximately 1,000,000 books a year.

AN ANALYSIS OF RECENT LIBRARY PLANS

23: Control by Central Desk: Carnegie Rectangle: Right-Left Plan	Page 215	28: Desk Controlling entry: Other areas separately Controlled	Page 275
24: Control by Central Desk: Right-Left with Stack: Sexpartite	Page 226	29: The Large City Libraries: Low: Widely extended: Cross Drafts	Page 288
25: Control by Central Desk: Various Types: H, U, L, and the V's	Page 240	30: The Large City Libraries: Compact: The Bookstack at the Rear	Page 294
26: Control by Central Desk: Trefoil: Quatrefoil: Radial Theory	Page 252	31: The Large City Libraries: Compact: Central or Tower Stack	Page 308
27: Control from two desks: Children separated from the adults	Page 265	32: The Large City Libraries: Compact: Open Plan: Stack Beneath	Page 320

CHAPTER 23: CONTROL BY CENTRAL DESK: CARNEGIE RECTANGLE: RIGHT-LEFT PLAN

THESE TEN CHAPTERS review and attempt to classify and analyze the floor plans of recent American public libraries. *Plan-Arrangement* alone is considered and anything distracting avoided, such as a photograph of the building that might draw attention away from its merits or its defects as a plan. Some of the buildings presented are ugly, inside or out; but each layout is worth studying, and most of them illustrate certain definite types of plan susceptible of the highest functional and esthetic development.

All plans are presented here at the same scale, *forty feet to an inch*, in other words, *ten feet to one quarter inch*, to facilitate comparison in size as well as in arrangement, but limited space compels us to restrict each of the larger libraries to the plan of its principal floor, with explanatory diagrams of the other floors at a smaller scale. Drawings are fairly accurate but schematic; windows not indicated because they have nothing to do with plan-arrangement, and any outside wall can be assumed to have windows.

Names of rooms are generally abbreviated as follows, and where needed for clarity we have sometimes superseded the official name with a

more widely used term, e.g., "Young People's Room" in place of High School, Junior, Senior, Students', Intermediates', or even Boys-and-Girls' Room (in distinction to Children's Room), etc.

Ad. RR.	Adults' Reading Room
Ch. RR.	Children's Reading Room
Ref. RR.	Reference Reading Room
Y. P. RR.	Young People's Room (<i>i.e.</i> , readers of high school age)
D.	Desk (Charging, Return, etc.)
C. or Cat.	Catalog
W. or Wk.	Staff Work Space
L. or Lib.	Librarian's Office
S. or Stf.	Staff Rest Room
K.	Kitchenette
T.	Toilet Room
H.	Heating Plant

Approximate costs include building equipment and the fees of architects and engineers. Population where given is at the time the building was constructed.

We failed to find a word to substitute for the French slang "parti," which architects naturally use in talking together but which has not

yet found its way into English dictionaries. Its meaning is general scheme of plan; or type of plan and general design; or rather the essentials of either of them that would determine the group to which the design belongs. We have carefully avoided the use of the word "circulation" in the architects' sense since it has quite a different meaning to a librarian.

The plan of the building may be found quickly by referring to the index, where plans, diagrams, illustrations and other references to the given building are specified.

Plans are grouped according to a theory of composition we venture to introduce that will explain itself as the chapters develop and naturally progresses from the smallest and simplest buildings to the largest and most complex. We have classified them according to certain *Types of Plan* we recognize, and named each type, avoiding such names as Butterfly Plan, which has been applied by different writers to totally different types.

In our classification of types we make no distinction between individual public libraries and branch libraries of similar size. Theoretically this seems wrong, but actually an examination of a plan seldom tells which it is. Many a branch has more book storage space and more work space than the average small individual library, and no better accommodations for receiving and shipping books.

Obsolete types are not presented. All are modern buildings and with one or two exceptions constructed since the first World War, because the war coincided with a period of transition, a general change of attitude toward library design with a fresh and frank approach to the fundamental requirements of library work and a gradual discarding of the idea that the importance of a library building as a civic monument outranked its value as a smoothly working machine. It is surprising, but a glance at a plan will generally tell whether a library is post- or ante-bellum.

The subdivision into small rooms is vanishing, the open plan growing in favor both in the

United States and abroad. Wherever practicable an interior wall is replaced by a line of book-cases that can be easily shifted, enlarging or diminishing a department; for the open plan is a flexible plan. No esthetic loss is evident but there is a very decided change in esthetic expression, paralleling the worldwide change in all other architecture.

There is no reason why beauty and efficient planning should not be combined, but to accomplish it the arrangement of plan must dominate. To an architect a sketch of the plan is the first step in design, though coincidentally he evolves in his mind a vague and shadowy impression of the mass with its appearance inside and out. With the second step this impression begins to materialize. From then on, plan, exterior and interior develop together.

Simplification and the Carnegie Leaflet. The stress on function as opposed to so-called "Architecture" started with the small libraries, for they had been the most absurd. Here and there a building appeared that was not over-elaborate without and over-complex within. General attention was focused on the movement shortly before the World War, in the tranquil days of Peace and Simplified Spelling, when the Carnegie Corporation issued its famous leaflet, "Notes on the Erection of Library Buildings," written to discourage extravagance and inefficiency, and proclaiming its primary purpose: "To obtain for the money the utmost amount of effective accommodation, consistent with good taste in building."

Quoting the leaflet:

"Library committees, especially in small towns, are frequently composed of busy men who, having lacked time or opportunity to obtain a knowledge of library planning, are led to select a design which, if built, would yield an inadequate return of useful accommodation for the money invested, and would unwarrantably increase the expense of carrying on the library.

"Some architects are liable, unconsciously, no doubt, to aim at architectural features and to subordinate useful accommodation. Some are

also apt, on account of a lack of practical knowledge of the administration of a library, to plan interiors which are entirely unsuited for the purposes of a free public library. Small libraries should be planned so that one librarian can oversee the entire library from a central position.

"In looking over hundreds of plans for small and medium-sized buildings, costing about \$10,000, more or less, we have noted some features leading to a wasting of space, especially in connection with the entrance feature, which, when not wisely planned, leads also to waste in halls, delivery room, etc.

"The economical layout of the building is sacrificed or subordinated at times to minor accessories, such as too much or too valuable space allotted to cloak rooms, toilets and stairs.

"The building should be devoted exclusively to: (main floor) housing of books and their issue for home use; comfortable accommodation for reading them by adults and children; (basement) lecture room; necessary accommodation for heating plant; also all conveniences for the library patrons and staff.

"Experience seems to show that the best results for a small general library are obtained by adopting the one-story and basement rectangular type of building, with a small vestibule entering into one large room sub-divided as required by means of bookcases. In cases where it is necessary, to secure quiet, glass partitions may be put above the bookcases. By a one-story and basement building is meant a building with the basement about four feet below the natural grade, the basement being from say 9 to 10 feet and the main floor from say 12 to 15 feet high in the clear. Plans have at times been submitted for 'one-story and basement' buildings, which differed from two-story buildings only by having stair to the upper floor outside instead of inside!

"The rear and side windows may be kept about six feet from the floor, to give continuous wall space for shelving. A rear wing can be added for stack-room (when future need demands it) at a minimum expense, and without seriously interfering with the library service dur-

ing its construction. The site chosen should be such as to admit light on all sides, and be large enough to allow extension, if ever such should become necessary.

"The accompanying diagrams are offered as suggestions in planning the smaller library buildings most commonly required, and will be found to include a maximum of effective accommodation relative to total area.

"While these diagrams are suggestive rather than mandatory, nevertheless, since they are the result of experience, those responsible for building projects should pause before aiming at radical departures, and see whether their alternative is to provide as much effective accommodation and have as little waste space.

"It may not be desirable to have library buildings planned from ready-made patterns, and yet a certain standardization of the main requirements of accommodation is as necessary for library buildings as for school buildings, which have been advantageously subjected to strict regulations both in plan and construction. Where architecture is best appreciated there are recognized types established for the various buildings of a public or semi-public character.

"It will be noted that no elevations are given or suggestions made about the exteriors. These are features in which the community and architect may express their individuality, keeping to a plain, dignified structure and not aiming at such exterior effects as may make impossible an effective and economical layout of the interior.

"These notes are of course written with the smaller buildings in mind; larger buildings require larger and more varied treatment, but no modification of the primary purpose."

The Carnegie leaflet was effective, not only because it was issued as a suggestion from the donor, but because of its sound common sense. Though written especially for small libraries, its warning applies equally to large. It was a protest against the small library of many rooms, impossible to oversee, difficult to rearrange, difficult to enlarge, over grandiose for its size, absurdly "multum in parvo." Most of its prin-

ciples are now accepted without question; it is still an active influence.

A draft of these notes had been written by Mr. James Bertram of the Corporation and several plan-arrangements drawn under the direction of Edward L. Tilton, the architect. Copies were sent to those librarians most experienced in building and to several architects for criticism and suggestion. Text and plans were modified somewhat, printed, distributed to anyone interested. This was in 1911. Later they were reprinted, the text substantially the same but with considerable revision in plans A, B and C, with D entirely changed and E and F added. This last printing is copied here, together with a plan of a larger building, with open bookstack shown in more detail and first issued in 1918.

Examining the Carnegie diagrams, certain common characteristics are evident:—

1. All are severely economical of space.
2. All are essentially rectangular and therefore economical in construction. As the shape approaches a square it approaches the maximum content for the minimum amount of outside wall.
3. With a minimum of outside wall, there is a minimum of heating waste.
4. A rectangular plan permits a simple roof with a minimum of upkeep and less tendency to leakage; although this ceases to be true when the building is so wide that skylights are necessary.
5. Every possible portion of the first floor is retained for reading and distributing books; therefore every other service possible is put in the basement.
6. All the library work, except possibly the unpacking, takes place on one floor; consequently book trucks can be wheeled everywhere.
7. On this floor, only vestibules and sometimes stairhalls are separated by solid partitions; all other divisions are by movable bookcases; therefore reapportionment of interior space is easy and the building can be enlarged in almost any direction.
8. The entire library floor and the entrance can

be overseen from the delivery desk and thus administration costs are reduced.

9. Entrance and exit are completely controlled from the desk; railings are used to compel readers to pass near the desk.
10. Vestibule and entrance hall are reduced to a minimum.

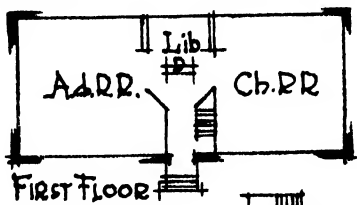
Now these are all excellent characteristics in themselves but they bring certain faults in their train:

1. The danger of monotony, that insidious enemy stalking every move toward standardization.
2. A severe utilitarianism that may go too far, toward the institutionalism abhorred of librarians.
3. Much stair climbing because so many rooms are in the basement.
4. The doubtful desirability of high entrance steps whether inside or out.
5. Esthetic difficulties, particularly in the exterior treatment where the severe box-like form is not easily made attractive and the high basement wall with its large windows is apt to suggest that the building has been "pulled up by the roots"; for it cannot be treated as a great base or pedestal because of these cavernous windows.

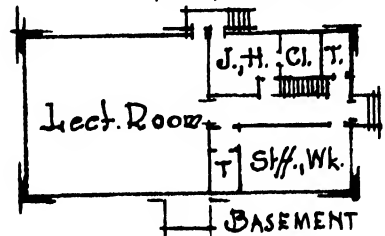
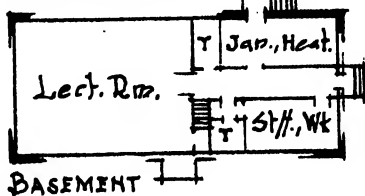
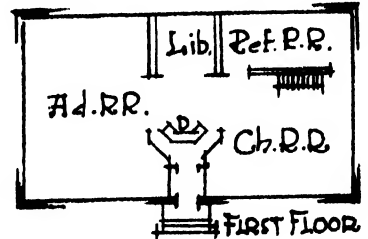
But in skilful hands, given a modicum of latitude, remarkable things can be done by taking advantage of sloping ground, by proper planting, and in various other ways. These solid little rectangular libraries set on their high basements are scattered over the country, through New England and the Northern Middle-West particularly.¹

Subsequent experience has developed and modified the different types, forsaking the rigid rectangle. A and B are the Right-Lefts; C is the germ of the L, D the Salient V, all shown in this and the following two chapters. Types E and F with their single reading spaces seem not to have fitted the usual library needs. The 1918 diagram is the Sexpartite Plan of Ch. 24.

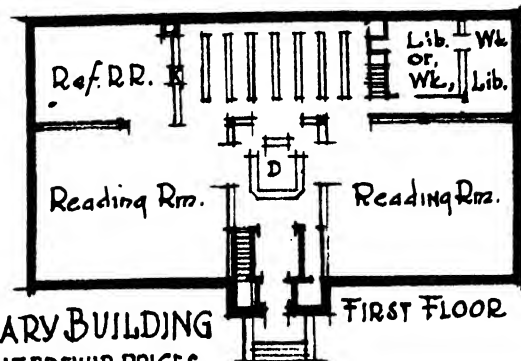
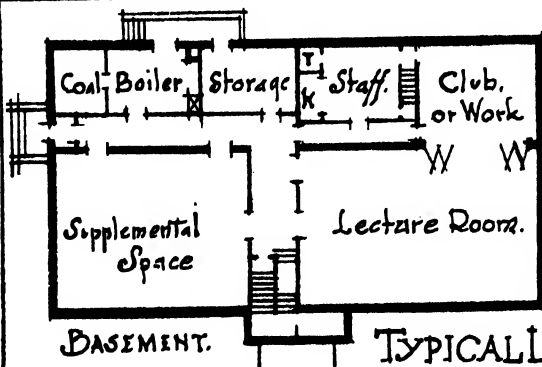
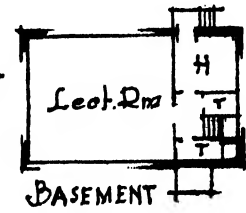
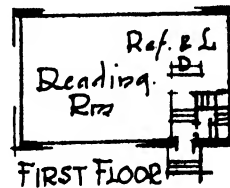
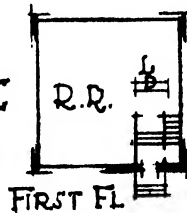
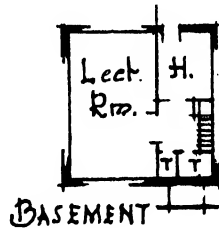
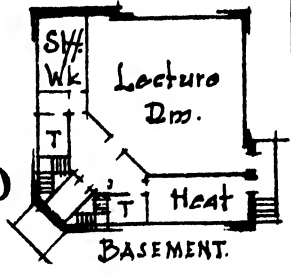
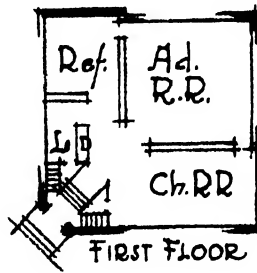
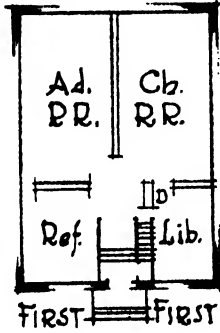
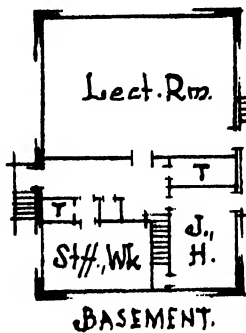
¹Vide Chalmers Hadley, *Library Buildings*: A.L.A. 1924; p. 154.



A. Right-Left: Ch 23
 B. " " " "
 C. cf. Durham: " 25
 D. cf. Salient V: " "
 E. no examples:
 F. cf. N.J. branches: 27.



PLANS FROM THE CARNEGIE LEAFLET.



TYPICAL LIBRARY BUILDING
 COST 50,000. AT PREWAR PRICES
 CARNEGIE CORPORATION 1918

THE RIGHT-LEFT PLAN: CARNEGIE RECTANGLES. The simplest type of library plan; adults and children to right and left, librarian in the center. Efficient; rather unimaginative; apt to be monotonous, particularly when enclosed in a severe rectangle.

Terryville is a perfect example of Carnegie A on a level site, with high entrance steps and first floor well above grade to permit large basement windows. Canajoharie uses the basement only for storage, so avoids the high steps. Belmont and Fremont are on hillsides sloping down from the entrance road, a fortunate "lie of the land" in almost every case, for entrance steps are unnecessary and their basements are adequately lighted from the rear. University Heights is on a street sloping sharply down to the left, so its basement auditorium entrance is naturally at that end. There is a level terrace across the front, planted with masses of shrubbery; the high basement is concealed and there is no suggestion of the usual "pulled-up-by-the-roots" impression.

Control of the entrance is accomplished by pushing the desk forward or by flanking the doorway with rails or low bookcases to force patrons to pass near the desk. How necessary this is depends on the attitude of the community. Chappell has little control of the entrance, stairs or Art Gallery; it would be a defective plan in most communities.

The stairs down from the first floor should be under supervision of the desk.

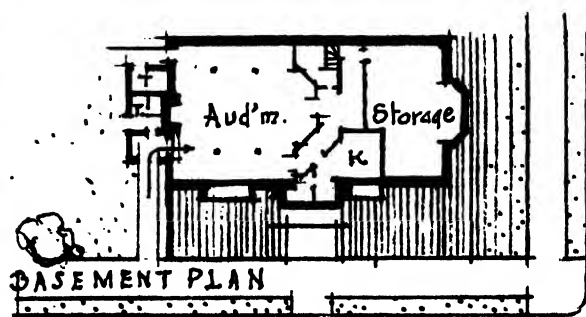
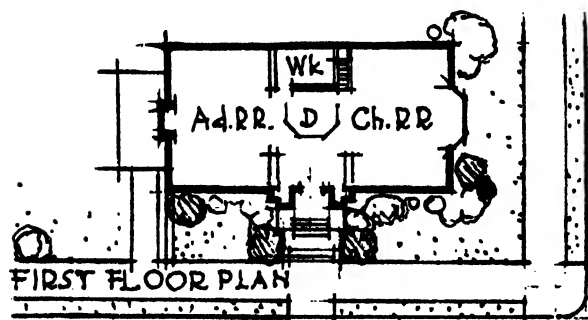
The auditorium or lecture room is now often

omitted. Pleasant Ridge finds its great room with 250 seats less useful than its "story hour" room with 35. Kitchenettes adjoin the lecture room in San Diego and West Newton, the rooms used for various community purposes.

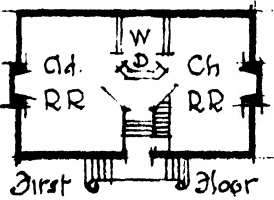
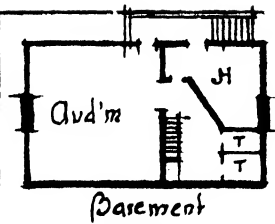
Work space is generally cramped unless there are supplementary rooms beyond the rectangle. Whether the projecting rooms should be at the rear in the usual position or in front as at Fremont is determined by the best and most unobstructed light. In fact the entire matter of plan-arrangement should be determined by the peculiarities of the site. In all but the very smallest libraries there should be an enclosed room for the librarian, lacking in many of these plans. Sorting of new material, temporary storage of a gift collection and particularly of unbound magazines, work with the glue pot, all this can be done in the basement.

Toilet rooms for the public, difficult to control, are in the basement in all these libraries. Often kept locked with key obtainable at desk. At San Diego, as in most small southwestern branches, they are entered from outdoors.

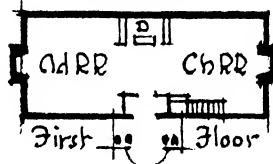
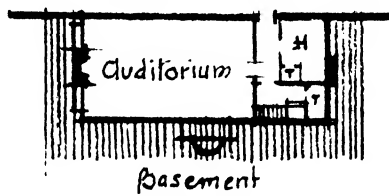
In a number of buildings where the need of reader space has decreased, the basement lecture rooms have been converted into children's rooms, the adults commandeering the entire first floor. So the lecture room may serve a useful purpose, holding a convertible area for possible future library use. One or two examples are given in Ch. 27. Some of these libraries may follow the same evolution.



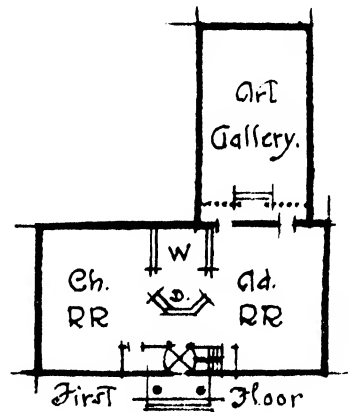
University Heights Branch: San Diego: Cal: Lincoln Rogers Arch: 1926



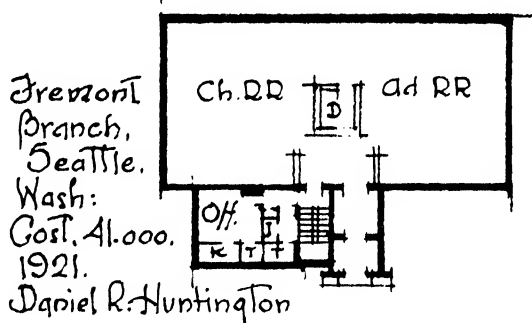
Terryville, Conn.
Brown & Yor Berer
Architects:



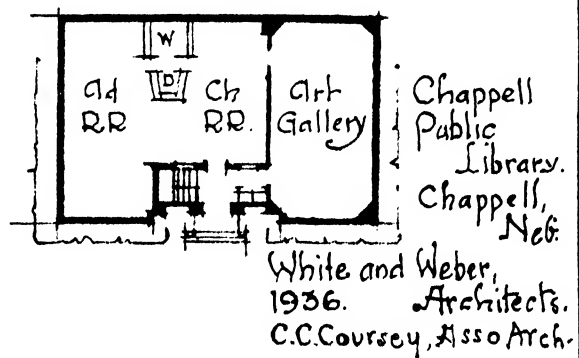
Public Libraries at
Belmont, N.H.
Wells & Hudson, Architects
1928. Cost, 32,500.



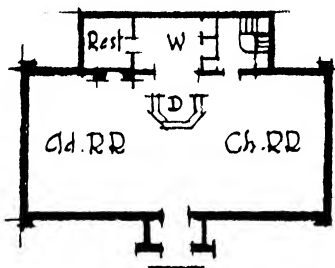
Canajoharie, N.Y.
E. J. Tilton & A. M. Githens
Architects.



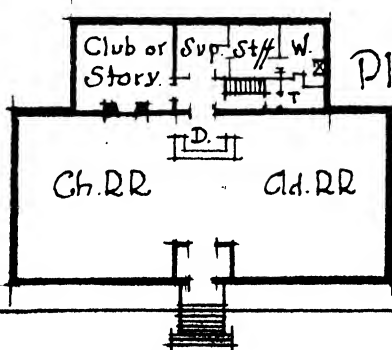
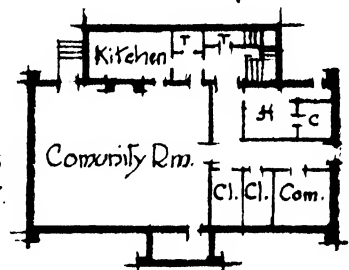
Fremont
Branch,
Seattle,
Wash.
Cost, 41,000.
1921.
Daniel R. Huntington



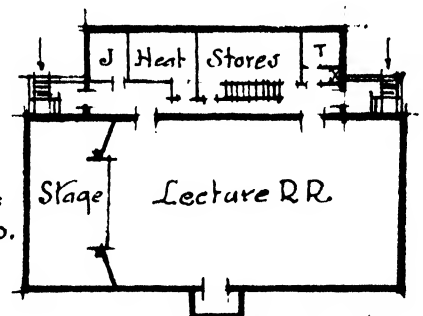
Chappell
Public
Library.
Chappell,
Neb.
White and Weber,
1936. Architects.
C. C. Coursey, Asso Arch.



West Newton Branch
Newton, Massachusetts
Edward B. Stratton, Archt.
Cost, 46,500.
1926:



Pleasant Ridge Branch
Cincinnati, Ohio.
Hunt and Allan
Archts.
1929 Cost, 58,500.



SMALL RIGHT-LEFTS OF NEW ENGLAND. Tiny buildings with a trend away from the severe Carnegie Rectangle. Usually a projection in front or rear for vestibule or workroom. Most of them are of discriminating and scholarly design, but it is difficult to compose a satisfactory exterior when a building is so short and upright. Whether such small buildings are justified is a question, for comparative cost per square foot of floor space is high. All have a complete basement, since it is more economical to excavate such a small area than to build an interior retaining wall around a heat-pipe trench, and unassigned space is useful for work or storage.

The projecting mass of a vestibule, whether within the rectangle or outside of it, is too narrow to look well; therefore flanking spaces are generally added to it. These vacant spaces must be used somehow; so basement stairs, a coat room or toilet rooms suggest themselves. Such rooms would be better in the rear; but the vacant space is in front. Rather conspicuous for some of these uses, but at least under the eye of the desk.

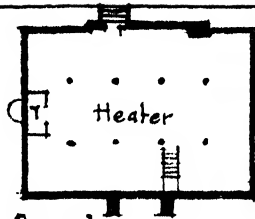
Positions of the stairs vary. If the vestibule is down a few steps as at Winslow, and particularly if there is a lecture room in the basement as at Crestwood, it is natural to continue down from the lower vestibule level, as most of the Carnegie diagrams suggest; but in such a position the stairs are not under control or in easy reach of the desk, and awkward if the basement is used for library work or book-storage. At Paxton they lead down from the work space behind the desk. Here an outside door at the stairhead serves as entrance to the basement. At Dracut they are placed where they can serve a three-tier stack room; here the outside rear stairs seem unnecessary. At Farmington they serve the community hall above and the museum in the basement, for this is more a general community building than a library. This combination of library with general community activities generally results in too small a library. Farmington, despite its straightforward and

clever planning, seems an example of what not to do. Split into three floors, it is not suitable for absorption by a growing library. The inevitable service difficulties are analyzed in Chapter 22.

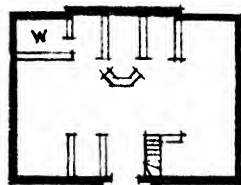
But most of these buildings are very practical and provide what a library requires. In most of them the workrooms and services are adequate and well arranged.

There is a great variety in the interior composition of these plans. Merrimac, Agawam and Crestwood are plain rectangles, the interior divisions extending only to bookcase height and not affecting the ceiling treatment, an arrangement permissible if the ceiling is high but awkward if it is low. Paxton and Farmington break into the rectangle with vestibule only, converting it into the letter U reversed. Winslow breaks into it front and back, forming an H, symmetrical about the cross-axis, a definite and stately composition, occurring on a somewhat larger scale at Mamaroneck, Townsend, Bexley, Wakefield, shown and analyzed in Ch. 25; on a much larger scale in the central library at Wilmington, and in a somewhat modified form at Indianapolis and Richmond.

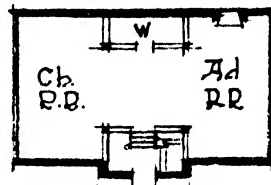
These New England plans are scholarly; but on such a small scale their careful symmetrical composition seems unnecessary and rather prim or "prissy," an heirloom from a more formal and conventional era, when a rigid architecture was a natural expression of the frame of mind. It is always difficult to get library furniture that harmonizes with a building or that can be placed so that it seems to belong to a building. When the building is small and the design historically correct and symmetrical about an axis the difficulty increases. For library furniture insists on being placed where it is most useful, not where it best composes with the architecture as seems to have been the custom years ago. Posters and exhibits, too, are sure to be placed where they can be seen best, without regard to the architecture. In character and shape they usually clash with a formal type of interior design, each spoiling the effect of the other.



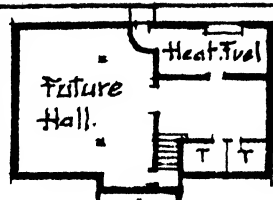
Basmt



First Floor



First Floor

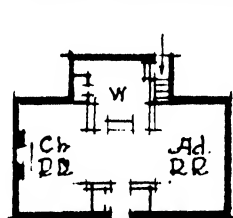


Basmt

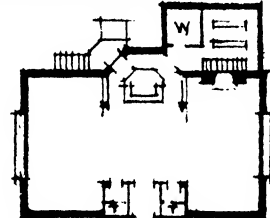
HOYT MEMORIAL: MERRIMAC: MASS.
1930: Cost, 35.000.

WINSLOW PUBLIC LIBRARY: WINSLOW: ME.
1927: Cost, 28.500.

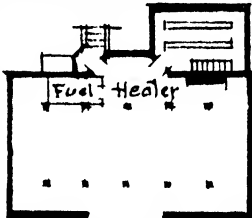
FIVE SMALL NEW ENGLAND LIBRARIES: COOLIDGE AND CARLSON: ARCHITECTS.



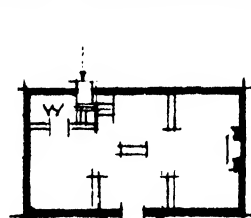
First Floor



First Floor



Basement



First Floor

RICHARDS MEMORIAL.

PAXTON: MASS.

1926

Pop.

Cost 25.000.

PARKER MEMORIAL LIB: DRACUT MASS.

1923. Pop.

Cost. 36.000.

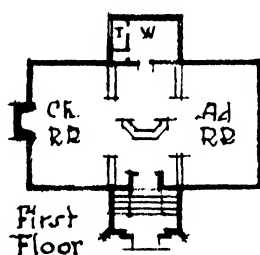
AGAWAM PUB. L.

AGAWAM. MASS.

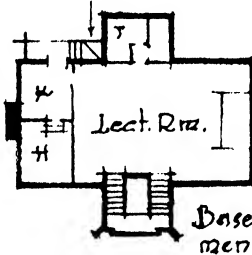
1924

Pop. 2.800

Cost. 24.000.



First Floor

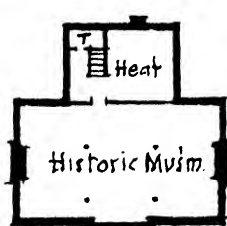


Basement

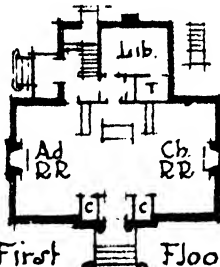
CRESTWOOD BRANCH: YONKERS: NEW YORK 1927

O. J. GETTE. ARCHITECT:

Cost, 23.000.



Basement



First Floor



Second Floor

GOODWIN LIBRARY:

FARMINGTON. N.H.

J. EDWARD RICHARDSON. ARCH: 1929: Pop. 2.600.

Cost. 31.000.

DISSYMMETRICAL RIGHT-LEFTS. One wing of the Right-Left Plan may be turned or set crosswise, with an interesting variation both outside and in, a departure from rigid symmetry about a central axis. It differentiates between the two rooms giving each its individuality without interfering with the single supervision, it is credited with breaking up echoes and with minimizing the distraction to adults the children cause, and it seems to give the children a region of their own. The vestibule difficulty disappears, for the flanking spaces are not needed.

But the decision to adopt such a composition must be made with caution, for the building will seem shorter and higher. Unless length is ample in proportion to height, the mass will be chunky and clumsy.

Usually it is considered that adults and children require the same space in a small library; but if not, the rigidity of the Right-Left may be lessened by a difference in the length or the width of the wings.

Little Compton shows the unequal division. Desk pushed forward to command the two reading rooms, for they may be considered two distinct rooms in this plan. Placing the fireplace in the adult reading room is unusual, for it is generally assumed, rightly or wrongly, that the children appreciate it more than adults. We might wish a wider work space behind the desk. The bookshelf alcove seems awkward, too small to justify it in this position and it blocks the natural lighting of the work space. At the Dunbar branch the bookshelves are next the desk, so the work and librarian's rooms have outside light. If there is a large book collection accessible to the public, it may justifiably replace the workroom in the place directly behind the desk. This is another element in the problem and is reserved for the next chapter.

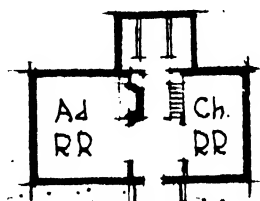
Piedmont and Gardena Branches are possible solutions of a narrow plot or a difficult orientation, with an entrance path past one of the wings up to the entrance door, not necessarily a disadvantage if the adjoining property is attrac-

tive. Closing of the entrance vista at Gardena by the club room wing with its veranda is particularly pleasant, a sheltered outdoor reading room which does not darken the adjoining children's room and yet can be entered from it. Difficulty of control is its drawback. Workrooms well placed in both plans, hard by the Desk. Gardena is reported as especially good in operation.

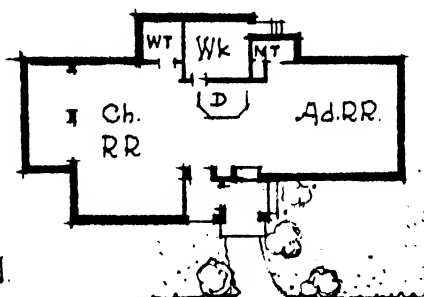
An unusual difficulty is rather brilliantly solved in the Washington Square Branch, a narrow inner lot whose side lines carry back diagonally from the street. The temptation is to build parallel and at right angles to the side-lines, but this never looks well in the street. Here the reading rooms are set en echelon parallel and at right angles to the street, and the difficulty changed into an asset by a clever arrangement of the entrance. Workroom directly behind the desk functions well; supervision is efficient, yet there is the desirable separation between children and adults. If the esthetic treatment were only better it would be a most noteworthy little building.

The Oakley Branch is a very simple, inexpensive and effective plan, characteristic of the modern direct approach to a problem unhampered by tradition or the urge toward formal composition. Circulation and readers are together in one room with no divisions except a short low bookcase separating children from adults. There is a quiet reference alcove in the far corner, not well supervised nor convenient to the desk; but in a small library all distances are short, so this may not prove important. Working space ample and well arranged. Orientation excellent. Basement only under the small rooms, for storage and heating plant, etc. (detailed plan in Ch. 36).

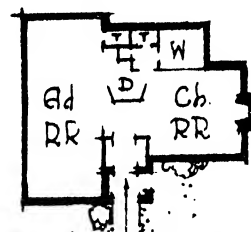
The low cost may be deceptive as a guide for future buildings. The plan is economical but there are omissions such as plaster on the walls that reduce cost. The quoted cost of any building in the book must not be considered as implying an economical or expensive plan-arrangement. Too many other factors enter.



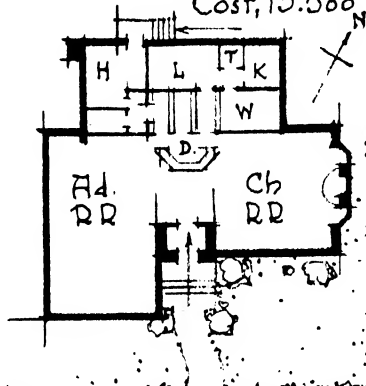
Brownell Mem. Compton R.I.
Ghas. G. Loring: Architect.
Cost, 13.500.



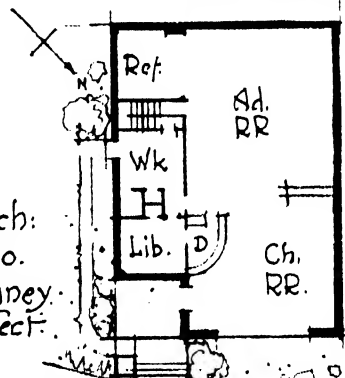
New Branch.
Monterey, California
C.J. Ryland. Archt.
1931.
Cost, 12.500.



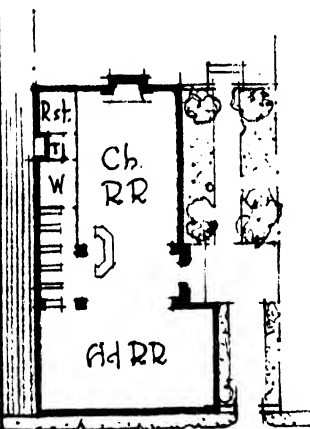
Montclair Br., Oakland,
Cal. 1930.
Cost. 6.600.



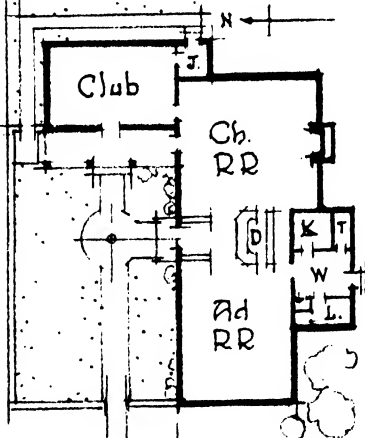
Paul Lawrence Dunbar Branch:
Dallas, Texas. 1931. Cost 25.000.
Bryan and Sharp. Architects.



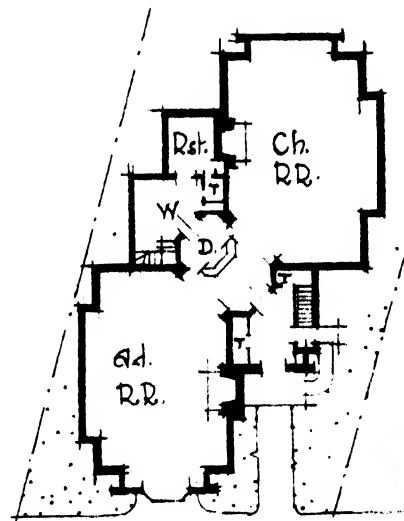
Oakley Branch:
Cincinnati, Ohio.
J. Marshall Rainey.
Architect.
1939
Cost. 20.000.



Piedmont Branch
Oakland: Cal. 1932.
Miller & Warnecke.
Archts: Cost 8.000.



Gardena Branch.
Los Angeles. Cal. 1928
Edw. & Ellis Taylor.
Archts. Cost. 14.500.



Washington Square Branch
Kalamazoo. Mich. 1927.
Billingham & Cobb,
Architects. Cost. 50.000.

CHAPTER 24: CONTROL BY CENTRAL DESK: RIGHT-LEFT WITH STACK: SEXPARTITE

WHEN WALL-SHELVING is insufficient for all the books, and free-standing cases are required, where should they be placed? Naturally within easy reach of the desk attendant, not so much for supervision as that she may act as reader's assistant without going too far from her desk. Consequently they usually form an Open Stack directly back of the desk, with the workroom (librarian's room) beside them in the corner. This is the arrangement in the 1918 Carnegie diagram and in four of the libraries shown on this page. The bookcases may continue to the corner opposite the workroom as at Springfield, or this corner may be used in other ways. The 1918 diagram uses it for a reference alcove but it is not well supervised. Camden puts its stairs and toilet there, Santa Catalina a club room, used for story hour.

But the workroom should be within easy reach of the desk attendant also. Townsend and the South Berkeley Branch follow the theory that this conjunction is the more important, that the workroom belongs directly back of the desk; that the additional shelving is required for adult books, so they should be on the adult side. Townsend placed additional book storage on the children's side, regarding these free-standing cases as temporary furniture, perhaps to be moved to an ell when more reading space is needed.

The competition between open bookstack and work space for the most favorable position occurs again and again in library planning; it is not confined to small libraries.

These supplementary elements added to the one-room library tend to crystallize it in a pattern or composition of six parts. The Right-Left Plan has three essential parts: a desk-space in the

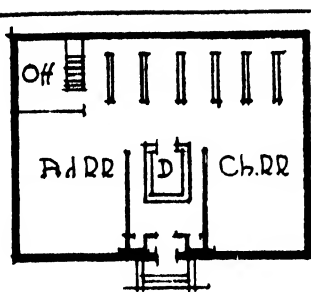
center, a reading space to the right and another to the left. The supplementary elements are generally in the rear and have a tendency to divide into three parts also, corresponding to the three in front. This is the *Sexpartite Plan*. Varied in proportion, in outline, and in the assignment of the three rear parts, it appears repeatedly among all but the very small and very large libraries. We analyze it more fully in Ch. 33.

In most of the single-room libraries the enclosures of workroom and vestibule are apt to intrude unpleasantly on the clear sweep of the ceiling, particularly if it is curved or otherwise treated as an architectural motif and especially if it is not very high. The workroom (or librarian's room) may be merely enclosed with bookcases, but the vestibule must be ceiled over and the top of such a ceiling catches dust and is useless for storage (Springfield, Camden, Santa Catalina; other libraries in the previous chapter). If the vestibule is partitioned to the full height of the room it appears as an awkward projection unless recognized and treated in the architectural composition as at Townsend, where the room is H-shaped. This develops as the H plan, analyzed in Ch. 25.

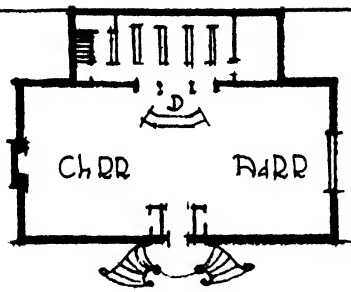
If the vestibule is outside the rectangle this difficulty is removed; but another is apt to appear, for the vestibule is usually too narrow to treat as an exterior motif unless it can include a stairway or some small room at each side as described in Ch. 23. The vestibule is a most annoying feature to the architect!

When a plan is deep and narrow, like Santa Catalina, it can generally be assumed that the principal lighting is from the side. The plot and its surroundings thus affect the type of plan adopted.

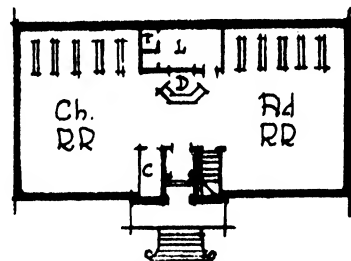
NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.



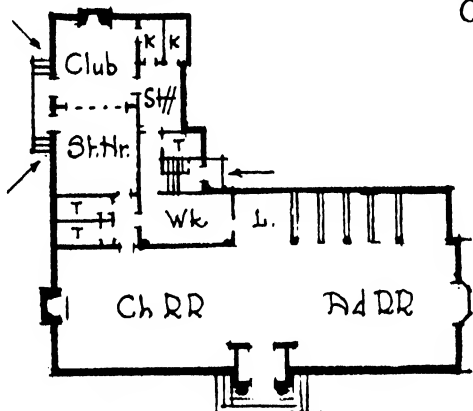
Liberty Heights Branch
Springfield, Mass.
Max H. Westhoff, Archt.
1931: Cost. 36,000.



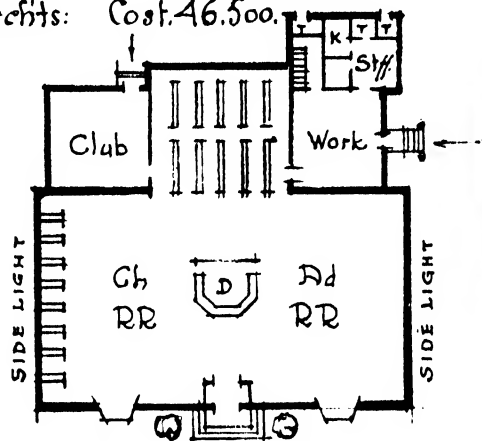
Camden Public Library
Camden, Me.
Parker Morse Hooper &
Chas. G. Loring: Archts.
Cost. 46,000.



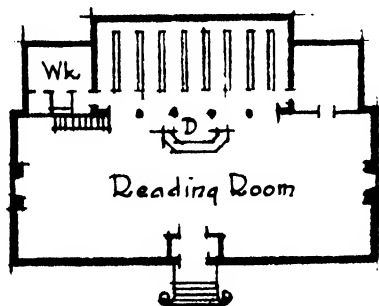
Hart Tree Library:
Townsend, Mass.
Chas. G. Loring: Archt.
Cost. 46,500.



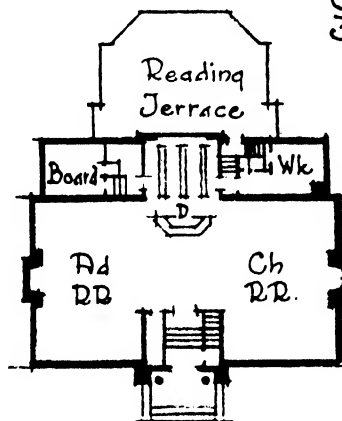
South Berkeley Br., Berkeley, Cal.
James W. Plachek: Archt.: 1927.
Cost. 30,000.



Santa Catalina Br., Pasadena, Cal.
Marston & Maybury: Archts. 1931.
Cost. 37,700.



Mason Library.
Great Barrington, Mass.
Blanchard and Barnes: Archts.
Circa 1916: Cost 60,000.



Louis Satzer Memorial
Public Library, Highland, Illinois.
Helfensteller, Hirsch & Watson:
Archts: 1929: Cost. 102,500.

SOUTHWESTERN BRANCHES: The Sexpartite can be developed along widely divergent lines. In Southern California, free from the winter heating problem, it has spread out horizontally, all the rooms on one floor, one reading space often wider than the other, smaller rooms set behind them in a great variety of position; a picturesque irregularity of outline possible because the buildings are low and long with floor close to grade level. Los Angeles published a set of principles for her branches corresponding to the Carnegie Leaflet but very different.¹ In general they apply to the best of the recent small libraries throughout the Southwest. They present:—

1. A single-floor building with only sufficient basement for gas furnace, water heater and the storage of wood for the fireplace.
2. No screens between charging desk and reading rooms. Desk near doorway to control exit.
3. Capacity of 10,000 books with possible expansion to 20,000 books in a second tier of stack.
4. No large Auditorium, but a small room for club meetings, civic or cultural gatherings and story hours.
5. Workroom as close to charging desk as possible; Librarian's Office where quiet may be secured; Rest Room and Kitchenette.

Several of the branches that have a single long reading room have been found noisy with the clatter of over-exuberant young people; the design of the building is accordingly criticized, though in another community the same design is perfectly successful. In certain of them a great loss of books is occurring. Rails or low cases around the desk to force borrowers into a single file are under consideration, a return to the arrangement in vogue some years ago and characteristic of the Carnegie plans.

Besides the features mentioned in the Los

Angeles principles, there are others common to most of these smaller California libraries and branches, such as an outside entrance to club-room; another near workroom, combined when possible with entrance to furnace room stairs; an open fireplace somewhere, used when it is not quite cool enough for the gas furnace; book-stacks always open to the readers; a generosity of space for staff rooms, workrooms and other services. There is the usual dual division of reading space into adults' and children's portions, with no special provision for the high school age except in the larger library recently built at Redwood City.

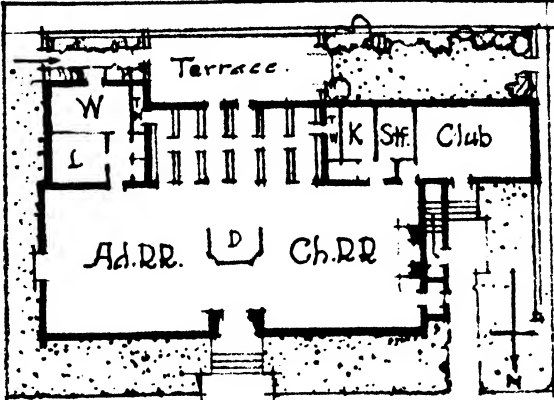
Of these six branches the three older have the desk facing the entrance; the three recent have the desk reversed and backed against a window between the doorways, an illustration of the increased popularity of this desk throughout the country. Compton narrows the plan at the center desk space, for here the full depth is not required, an element of the Detroit principle (Ch. 28). It permits an interesting recess in the façade, carried out in the modernistic manner with a wide panel of structural glass between the doors, lighting the desk.

Compton and El Monte drop the usual club room but develop an open patio next the children's room, the outside gates of it ordinarily locked.

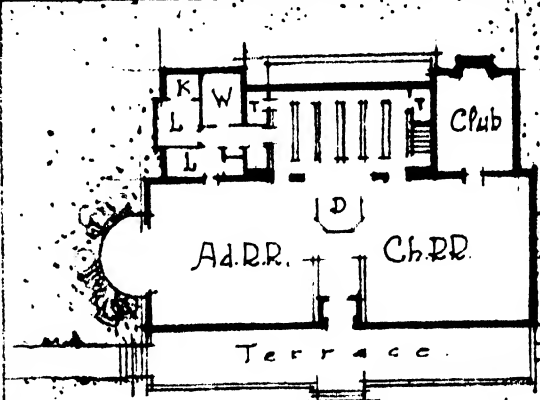
The Sexpartite character of all these plans is quite evident. In center-rear is the generous bookstack, freely open to readers. Arrangement of the rear corners varies widely. A strict symmetry is rarely attempted, a refreshing contrast to the tighter compositions common in the Eastern States.

¹*Los Angeles Public Library Branches—1928.* 64 pp. Quoted again in Ch. 36. See also D. Q. McComb, *Public Library Buildings*, Los Angeles. M. O. McComb: 1935: \$5.00.

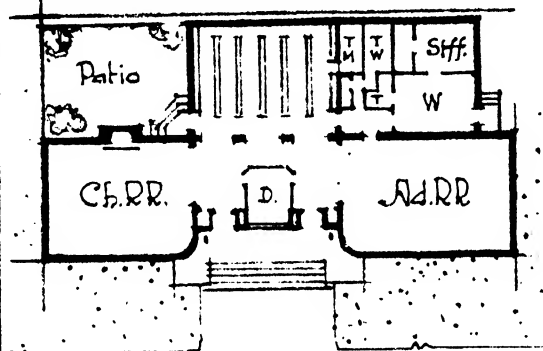
NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



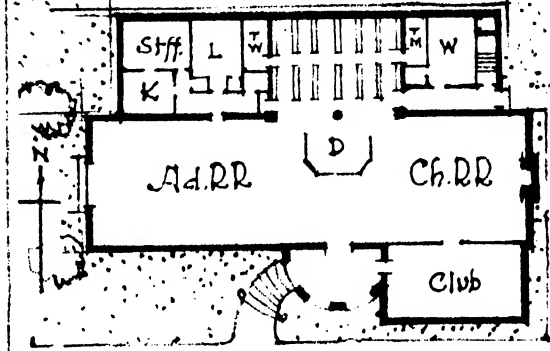
Angeles Mesa Branch: Los Angeles, Cal.
 Royal Dana. Archt. 1927
 Cost. 35,000.



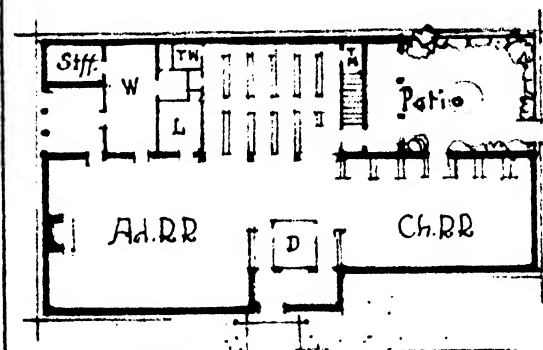
Washington Irving Branch:
 Los Angeles, Cal: 1927
 Cost. 37,000. Allison and Allison, Arch'ts.



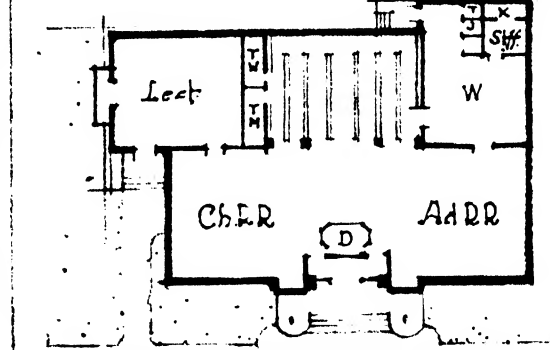
Public Library, Compton: Cal:
 H.L. Gogerty, Archt 1936.
 Cost. 25,000.



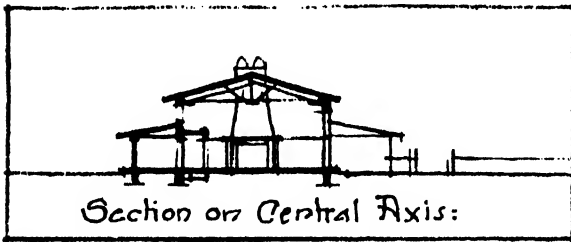
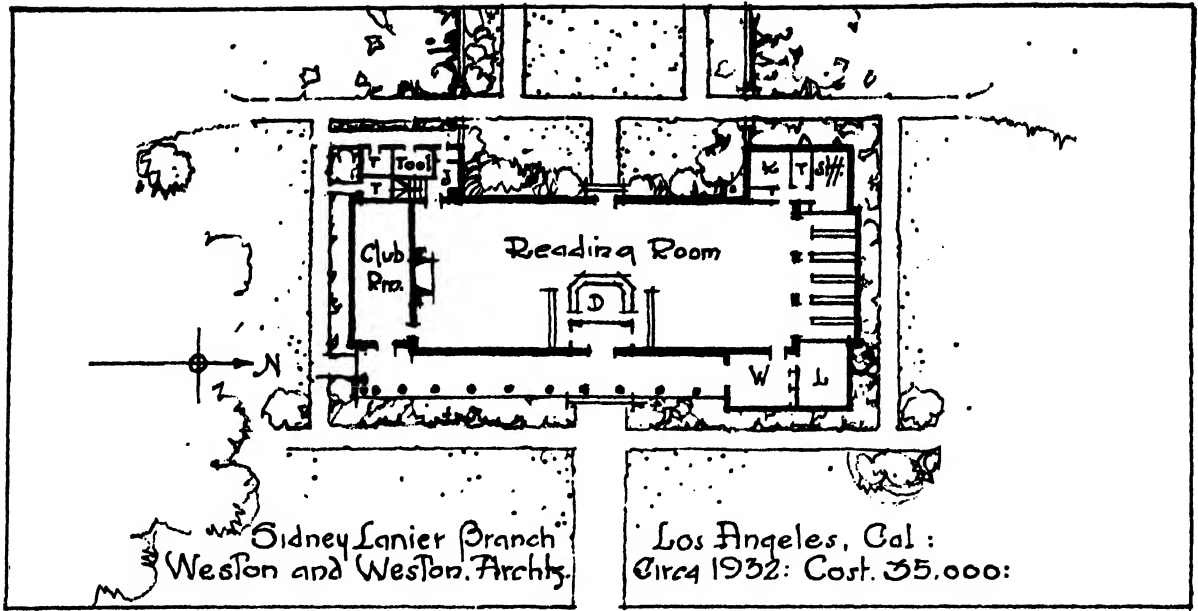
Fremont Branch: Los Angeles.
 M.I. Barker, Archt. 1927.
 Cost. 36,500.



Public Library, El Monte, Cal.
 Farrell and Miller, Archts. 1936.
 Cost. 35,500.



Public Library, Torrance, Cal.
 Walker and Eisen, Archts. 1936
 Cost. 30,000.



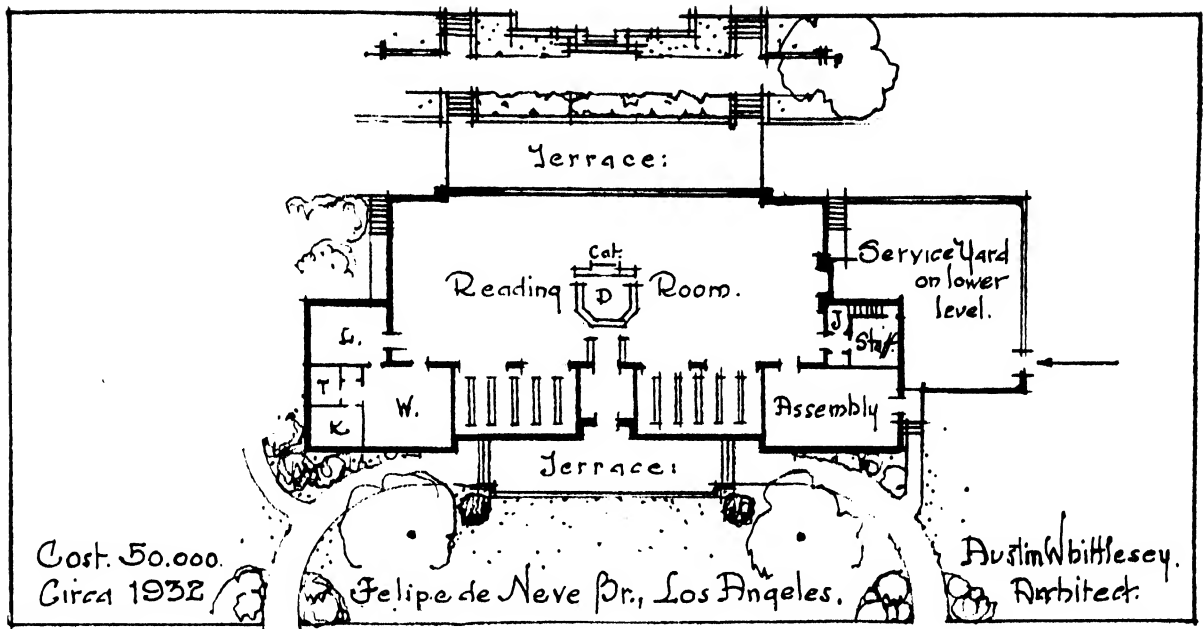
ENTRANCE FRONT, GARDEN FRONT:

Because the typical Right-Left Plan is efficient in most cases there is a tendency to repeat it where a different arrangement might be much better. The dictum that site must govern plan-arrangement is fundamental in all good architecture. The site must be studied before any sketches are made. All its possibilities must be used to advantage. Reading and workrooms must face toward the best light, where it is unobstructed and assured against future obstruction. Orientation is important, north light best, then east, south, and west the worst. Summer breezes must be considered; also quiet; last in importance, a pleasant outlook. The slope of the land must be considered so there is easy access to the building with the fewest possible entrance steps. The public entrance must be where people pass.

Naturally there must be a compromise, for generally these desiderata conflict. The plans in the rest of this chapter and the next show deviations from the Right-Left, suggestive as solutions of various unusual site-conditions.

The Lanier and DeNeve branches are on somewhat similar sites yet have very different plans. Each has a front toward the entrance and a second front toward a planted vista with central lawn or pool. The reading room of Lanier is lined with full-height bookcases interrupted only for vestibule, fireplace, the necessary doorways, and a single central glazed doorway looking on the lawn. DeNeve interrupts the wall shelving by a series of full-length windows toward the pool, but makes up for it by the bookstack on the opposite side with clerestory lighting above. The wide windows toward the pool combine reading room and park in a single composition, bringing out-o'-doors into the room, as it were.

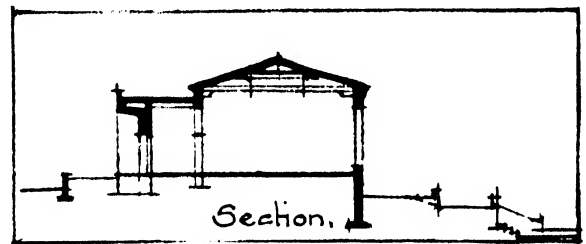
The vestibule at DeNeve fits in easily between the bookstack ranges, avoiding any projection into the reading room. Such a spacious vestibule is generally good. Exhibit cases and long bulletin boards line its walls. Compare Bexley, Ch. 25. At Lanier the vestibule is inside the reading room, so is small as possible. DeNeve's desk



faces the entrance to avoid glare in the eyes of the staff; Lanier, lighted front and back by clerestory windows high in the walls with only the center window down to the floor, has the reversed desk, backed against the glazed vestibule wall. Danger here, since clerestory windows toward the west are apt to be difficult for the desk staff during the afternoon. In each case the desk closely controls the entrance. The backs of low bookcases form a barrier to force everyone entering or leaving to pass close to the desk. In Lanier there is only a twenty-two-inch passage. In DeNeve the flanking bookcases act as a guard to the open bookstacks against the front wall; no books can be taken out of the building without their being carried past the desk. In Lanier the bookstack at the end, so far from the desk, involves many waste steps; still more when the second tier is added.

The various supplementary rooms in both buildings are in accordance with Los Angeles custom for her local branches. No basement except what is necessary for wood storage, heating plant, underground fresh-air ducts from it, and small incinerator. The first floor is constructed directly on the ground.

These buildings suggest the most effective



arrangement of the plan to take full advantage of a site when the best light is from the rear. Compare Fremont Branch, Seattle, Ch. 23. It would be better if the workrooms were closer to the desks; the smaller the building, the more important this is; for work is less specialized and a staff member must often go from one to the other.

As in many of the small libraries and branches, the composition consists of a long rectangle, its ridge-line dominating and tranquilizing the silhouette, so the various gables and lean-tos of the lower rooms surrounding it give a picturesque variety and interest to the mass without each one being too self-assertive. Thus there is a variety to the mass, a proper subservience of minor parts to the dominant major, with a consequent repose.

NORTH LIGHT, CROSS VENTILATION:

In Tulsa there is a short severe winter and a long, intensely hot summer with prevailing south wind and the glare of brilliant sunlight. The architect after preparing tentative plans for branches along conventional lines, rejected them all and started anew with the following postulates:—

1. All light from the north; it avoids the hot summer sun, is uniform and therefore ideal for reading.
2. Natural ventilation for at least eight months of the year; from the south, as this is the direction of the prevailing winds.
3. Outdoor reading terraces, sheltered from the sun in hot weather.
4. No shelving on the same wall with the windows, to eliminate unpleasant glare in the eyes when reading titles on the shelves, and disturbance to readers by persons passing between them and the light.
5. Charging desk placed so that complete supervision of all departments and of open terraces could be maintained by one person while at desk.
6. Ample height in the reading rooms because of excessive summer heat.

To accomplish these ends he started his study with section instead of plan. Wall heights were determined at the south wall, by adding the strip of ventilators to the standard shelving height. Outside, these top ventilators appear as a band of louvres under the eaves, the bottom ones as a similar band above the base. Inside, they occupy the space usually taken up by the bottom shelf, acknowledged as undesirable if there is sufficient book capacity without it. On the north side the glass extends to the top of the wall. The width of the building is determined by projecting a line at an angle of 30 degrees from top of glass to table top at probable farthest location from the glass. By leaving the roof construction exposed it was possible to keep the wall heights

to a minimum yet have a greater height between.

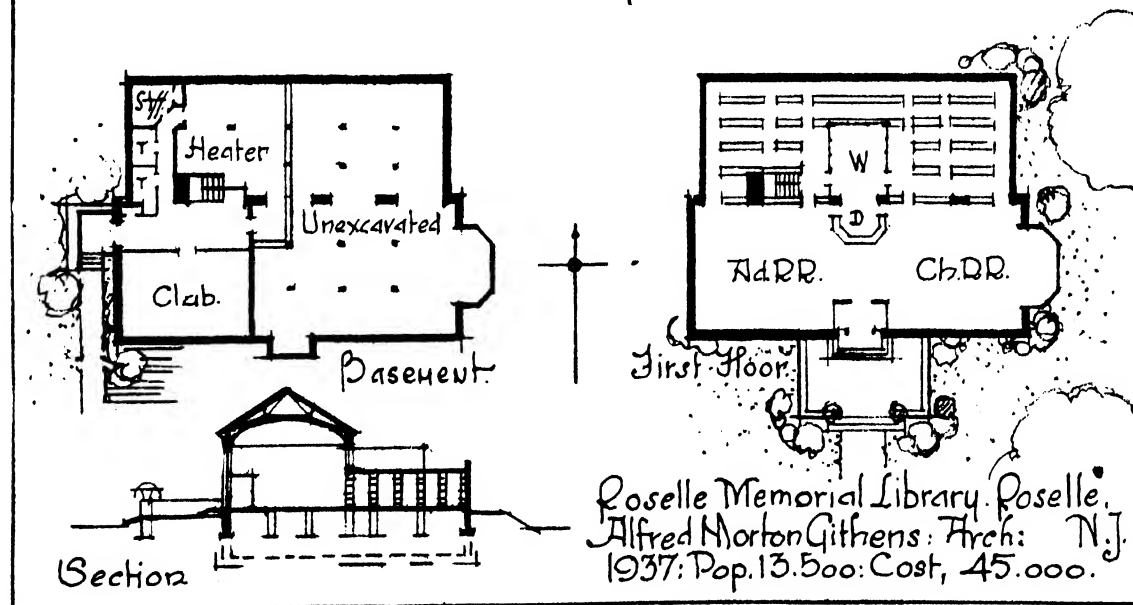
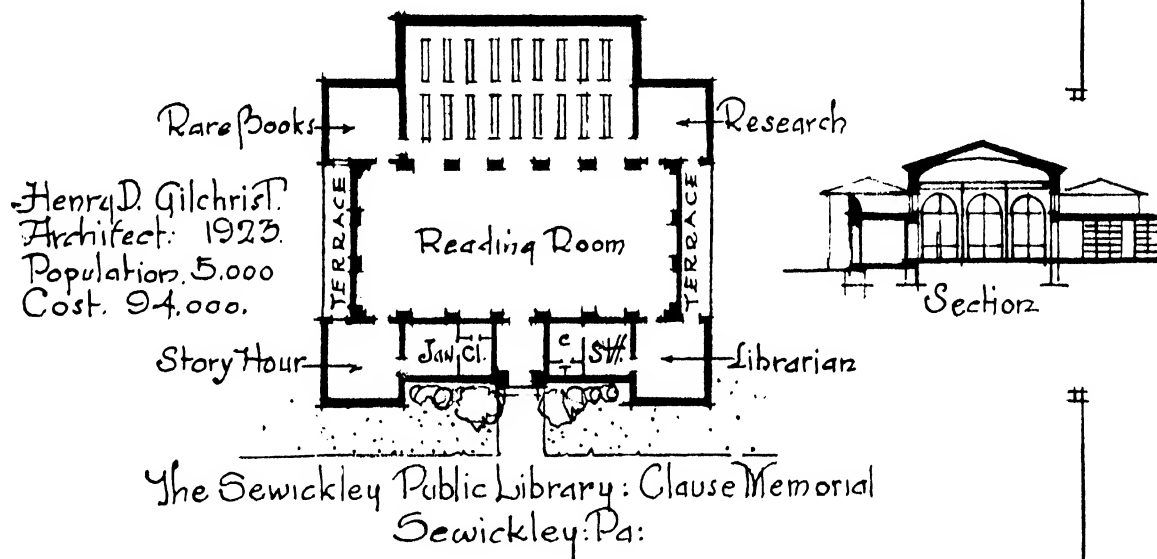
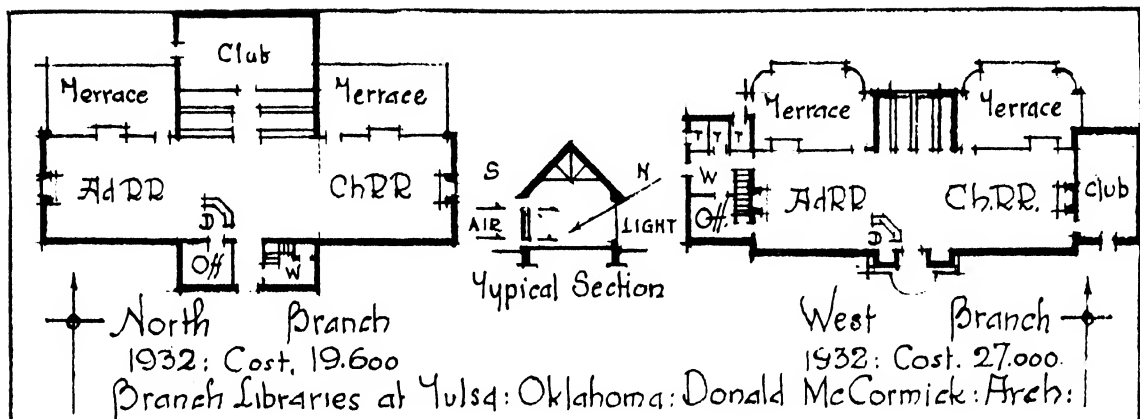
North as the only light source is new; windows on one side, books on the other, is new; the ventilation scheme is new. The omission of all bookshelving on the north wall and of the bottom shelf on the south wall drastically cuts book capacity of the reading rooms. The open stack makes up for it in quantity, but wall cases are more economical of space and generally considered more desirable than rows of free-standing cases. But there is a logical working out of problems, a fresh approach, that is admirable.

Sewickley is unusual, a simple large and lofty central reading room lighted by arched clerestory windows above the smaller rooms that surround it and by full-length arched windows at the ends; a formal room, but tempered by comfortably disposed and inviting furniture. Through its entire length it must serve for access to the lesser rooms. This might be confusing and annoying, unless there were ample space per reader. It is not an economical plan.

The composition is pyramidal, four symmetrical pavilions at the corners of a higher central mass, a rather precise and balanced arrangement not easily altered or added to, quite the opposite from the free and unfettered design of the preceding California branches. Despite its dignity, we consider this rigidity unfortunate in a small library.

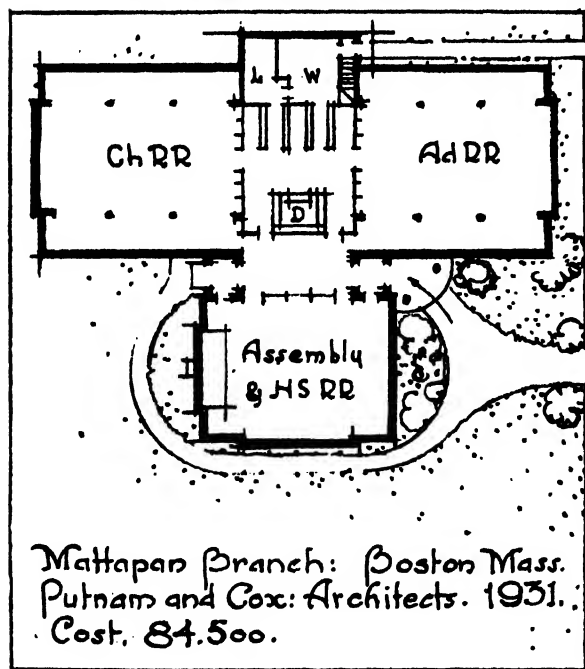
Roselle develops a large low open bookstack behind the reading-room rectangle, and controls it from the glazed workroom behind the desk, placed here to concentrate work and save steps. With bookstack ranges parallel to the front, the bookcase ends do not disfigure the reading rooms. A row of clerestory windows over the stack and around the workroom gives uninterrupted north light. There should have been a small librarian's office; basement should have been completely excavated, for the saving was poor economy.

NOTE: Economy of plan-arrangement must not be judged by the cost of a particular building, for other elements affect cost much more. Quoted costs include equipment and fees but not the land.



DEVELOPMENTS OF THE RIGHT-LEFT: The Mattapan Branch is a singular variety of the right-left plan, placed end to the approach with an assembly room opposite the entrance, a double-purpose room, furnished with tablet-armed chairs and serving at times for lectures and at others for a reading room for young people. The wall bookcases, with a large percentage of senior high-school material, are fitted with rolling screens, locked except when the room is used for reading. Compare the rear room of the Philadelphia branches, Ch. 26. Control of the readers in the two larger reading rooms is strict: rails and gates at the desk guard the approaches; gates electrically controlled and unlocked by a push-button at the desk; but the value of this electric device has been questioned by the librarians as too complicated. The assembly-reading room requires its own control. It is overlooked by the desk, but through the entrance traffic and through a glazed screen. Needlessly complicated. The Trefoil (Ch. 26), or the subdivided wing as at Dayton View, p. 249, or Redwood City, p. 239, seem better solutions of the three-group plan.

Daylight throughout good; roof over center



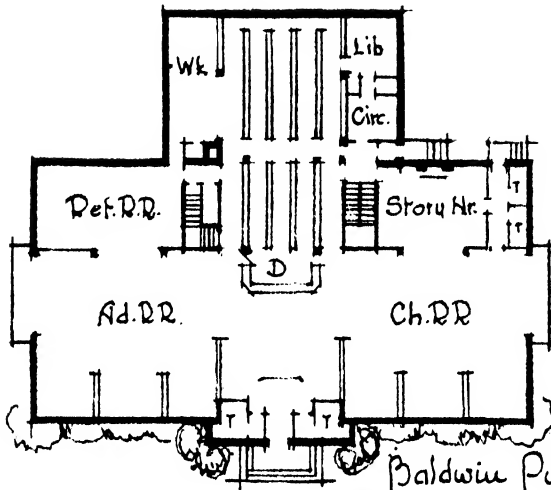
portions of the larger rooms is raised as in a church where nave is higher than aisles and clerestory windows light the central floor space. A lantern with vertical windows is at the crossing, over the delivery desk. Staff room and toilet in mezzanine over the librarian's room and workroom. A small cellar contains the heating apparatus.

The casual corner entrance into such a symmetrical plan is faulty in composition and therefore unpleasant. It is a normal right-left plan with a third room put squarely in front of the doorway.

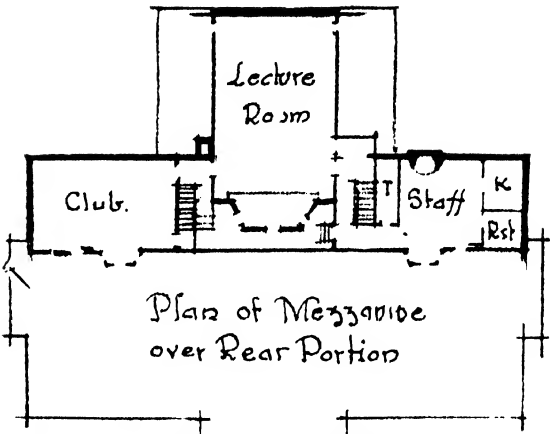
The larger single-floor libraries on the page opposite are based on the Sexpartite development of the Right-Left Plan. An extended book-stack is characteristic, placed in the center-rear. Each places a reference room in the left rear. Total area is so large that the desk cannot attempt complete supervision, so in a measure the problems of a large library are foreshadowed. All have developed basements and some of the service rooms are there.

The Baldwin places a large lecture room in a mezzanine; unusual and difficult in a building of its size, for two stairways are generally required by building laws. These stairways make the open stack room unfortunately deep and narrow, separate the workrooms from the desk, and prevent a possible supervision of the reference room (compare West Hartford, Ch. 27). The single high front room with mezzanine along the rear recalls the 1918 Carnegie Plan (Ch. 23) with axis through the center of the block, always very difficult to reconcile with the natural axis of the interior reading space. Entering the two toilet rooms from the vestibule is not considered good practice, nor is the subdivision of reading space into so many small units or alcoves. Current practice is toward larger spaces or more informal and flexible subdivision by low bookcases stood on the finished flooring and therefore movable.

Aliquippa puts workroom, or "office," closer to the desk and opens a doorway to the reference room for convenience rather than super-



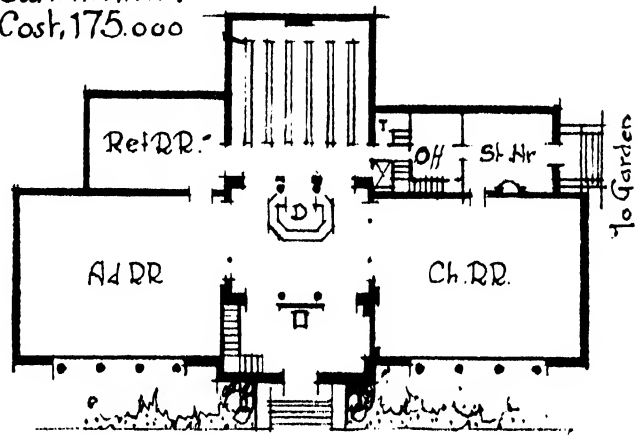
Baldwin Public Library: Birmingham: Mich.: 1927
 Burrowes & Ewrich: Archts
 Pop., 8,000. Cost, 175,000



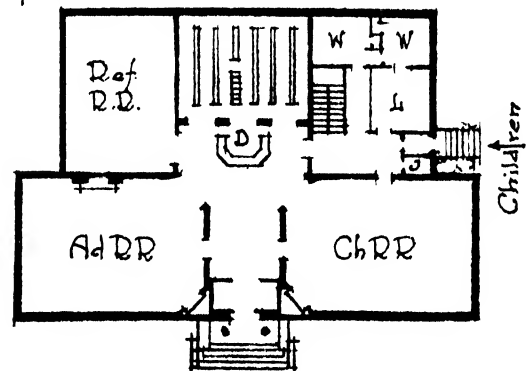
vision, for one of the staff is stationed there. Axis difficulty avoided by not including the rear rooms in the basic rectangle. Memorial vestibule with statue of the donor of particular interest. Besides ample receiving room, workroom, book storage, toilets and staff rooms, there is a large exhibition-lecture room with kitchenette in the basement. The story-hour room opens into a walled garden like the Western patios.

The plan separates delivery space from the reading spaces without destroying control, by the architectural form and by the interposition of open wrought iron grilles. Reducing the depth of this central space and using the excess for increasing the vestibule is reasonable and effective. The stairway to the rooms below is awkward in arrangement, particularly in such a formal plan. It was difficult to find sufficient space for it.

North Tarrytown adopts the diagonal corners of the older Evanston and Elizabeth libraries for better supervision and places the desk farther to the rear. The side entrance is open afternoons for the children. A librarian is then on duty in their room. At other times they use the main entrance and are supervised from the main desk. The last two libraries had ample funds, and the details of equipment and finish show it.



B.J. Jones Memorial Library
 Aliquippa, Penna.
 Brandon Smith, Arch: 1929.
 Pop. 25,000: Cost, 366,500.



Warner Memorial Library
 North Tarrytown, N.Y.
 Walter D. Blair. Arch: 1929.

DISSYMMETRICAL SEXPARTITES: The Sexpartite composition may be retained and the outline varied to almost any extent. An even balance of right and left, one side matching the other, may grow monotonous. If this book encourages a greater freedom and informality in future buildings it will render a true service.

Wilshire demonstrates this elasticity, yet retains the efficiency of the Sexpartite plan. Each reading room has its special shape and character. The open stack and subsidiary rooms are all conveniently placed. Here the sixth element is subdivided into service rooms, porch and patio. The latter, though far from the desk, is supervised by the service rooms. A vestibule flanked by toilet rooms is obsolete now in the Southwest.

The Carpenter Branch is particularly well fitted to its site, the outline of the plan and its position on the level plot well studied. Maximum open space where it counts. Rooms most in need of light face the two streets, so it was possible to place the building close to the inner lot lines with only sufficient space between for service yard and area. Reading rooms are set back from street lines to lessen traffic noise and give a finer setting to the building. Auditorium brought forward to conceal the side of a commercial building across the alleyway, for the street in front is an important shopping street. Thus the display window in end wall of auditorium is in the most effective position next the sidewalk. The side street is residential; houses set back with lawn in front. Though the library extends to the lot line, the children's room projects forward well away from the line and gives the impression of standing clear.

The floor is near ground level. Only a small portion of basement is fully excavated, the major part of it just deep enough for heating pipes. First floor under reading rooms is supported clear of the ground, but floor of auditorium laid directly on it. The library states that nearly enough money was saved by not excavating all the basement to pay for the auditorium; it seems incredible.

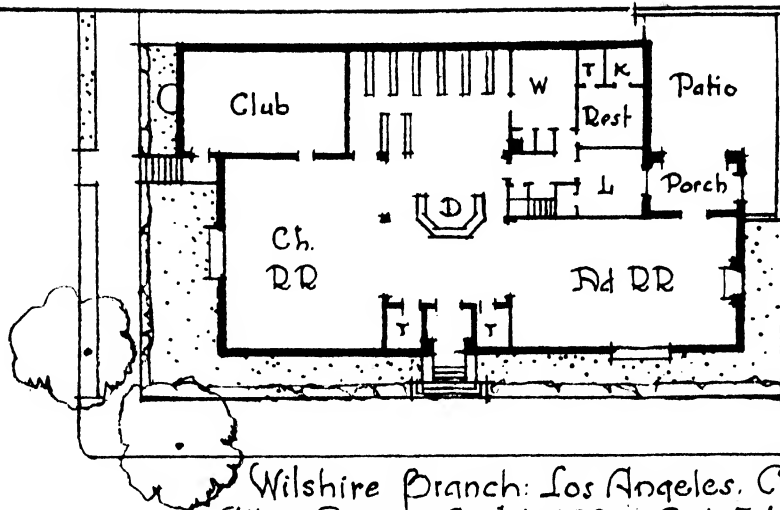
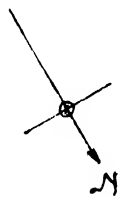
This is one of the few branch libraries with a

fairly large auditorium on the main floor. It is well arranged in relation to the library proper, the hallway separating them. Clubroom behind may be used as a deep stage. Kitchenette adjoining. Receiving, unpacking and storage in the basement, joined vertically to the work spaces above by a stairway and a lift large enough for a book truck. The stack room serves as a passageway connecting library proper with auditorium and club room, a difficult communication to compose satisfactorily in this or any other way.

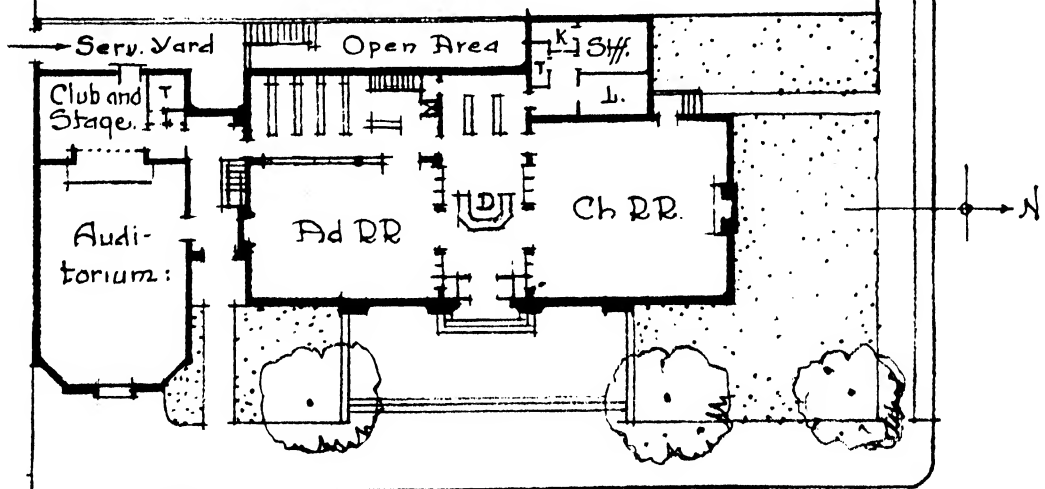
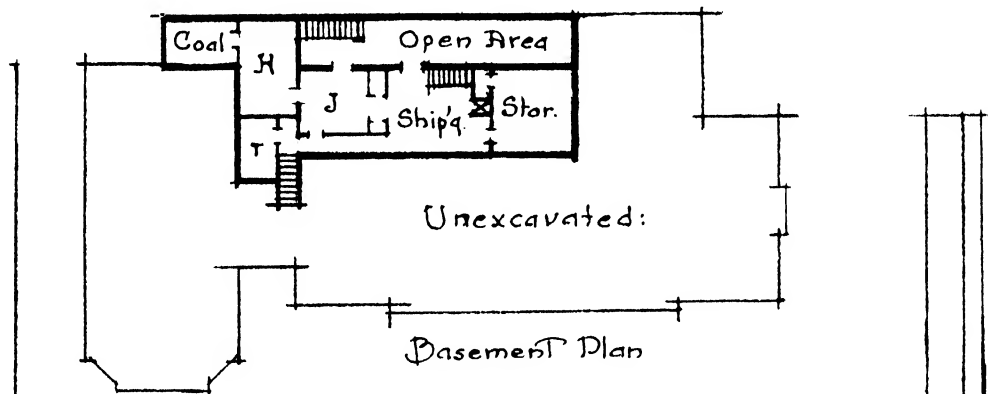
The plan is confused, however, in the arrangement of the spaces behind the desk and left reading room. The workroom is forced up into a mezzanine with consequent stair climbing and waste of time in travel. It would seem more efficient if the entire space behind the desk were assigned to staff work, the stairs and book lift arranged more compactly and the bookstack concentrated behind the adults' reading room.

Adults' reading room seems inadequate in size compared to total area. Children's room more generous, with an outside entrance that can be used in the busy afternoon period. When the Carpenter Branch was contemplated all the city branch libraries were asked to submit lists of desirable and undesirable features in their buildings. The lists were discussed and much of the material given the architects as a series of suggestions. Most of it had to do with detail; but some of it covered matters we are stressing throughout this book as important, *i.e.*, entrance near sidewalk level, a few windows with low sills so that passers-by can see the activities within, sufficient work space with book lift into it, basement stair supervised from the desk, etc. Other items we do not think always desirable in a building of this size included many rooms for clubs and public meetings; staff quarters on main library floor; separate children's entrance. But the whole idea of the questionnaire was admirable and would be a great help to a conscientious architect.

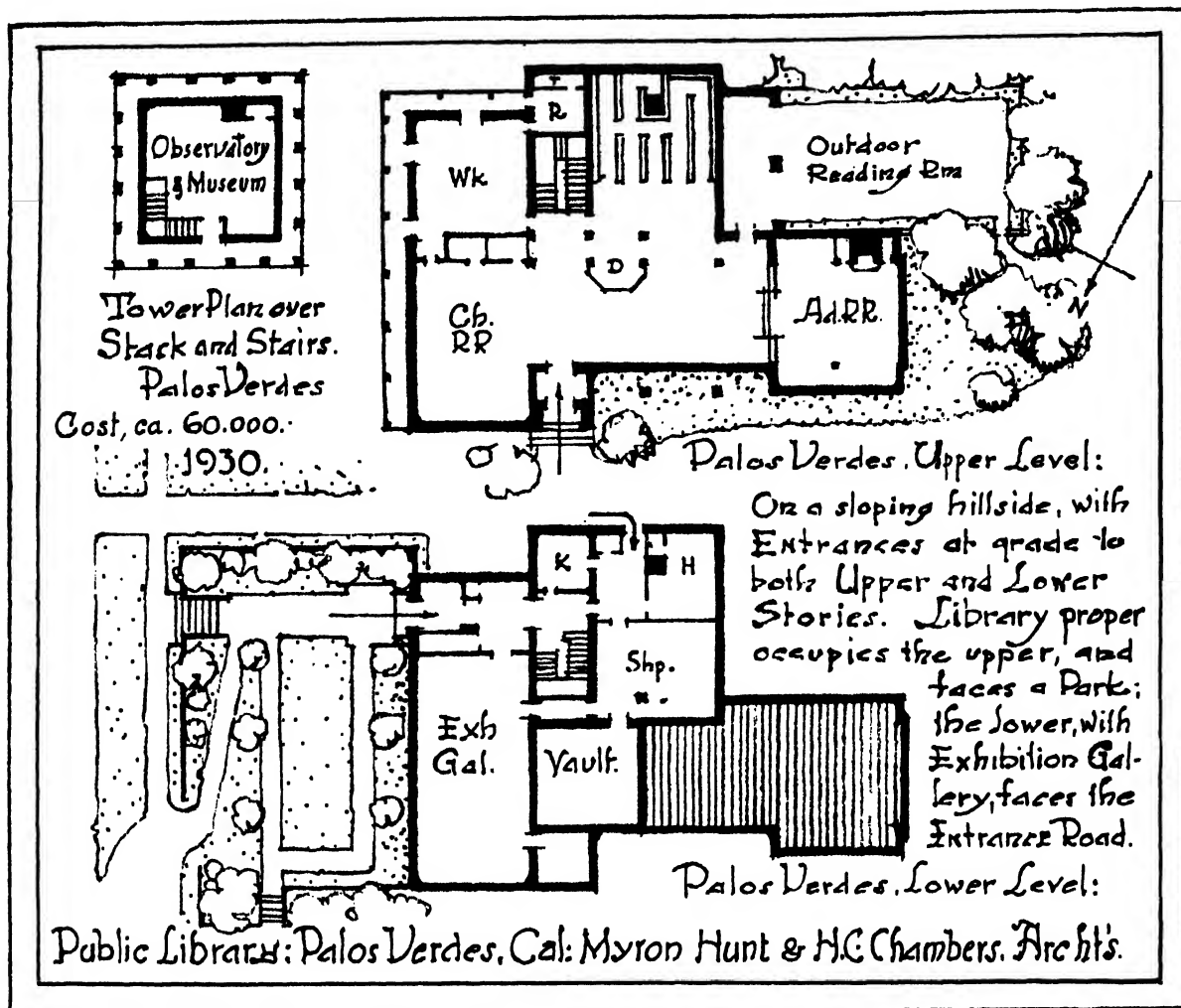
The more technical information the librarian gives the architect and the more frequent their conferences, the better is the resulting plan.



Wilshire Branch: Los Angeles, Cal:
Allen Ruoff. Archt. 1927: Cost. 54,000.



First Floor Plan.
George O. Carpenter. Branch: St. Louis: Mo. Trueblood and Graf
Architects.
1927: Cost. 127,000.



FURTHEST DEVELOPMENT OF THE RIGHT-LEFT: Palos Verdes, one of the most attractive of the Southern California libraries, serves cultured people in a leisurely community. Entrance not closely controlled; no crowds; no need to squeeze in a maximum of seats and tables; a pleasant air of space. The hillside setting is unusually picturesque and must be studied if the clever planning is to be understood. A small park slopes irregularly down from an upper road past the library entrance, continuing with a formal arrangement of stone stairways and terraces to another entrance on a lower floor and still down to a lower road. The library proper is on the upper floor, entered

either from the park directly or by a stairway from the lower entrance.

The functional arrangement not unusual; a variation of the Right-Left Sexpartite with open stack directly behind the desk and generous workroom beyond the stairs to one side. Space for a second tier of stacks above the present tier and for a third below. Facing southwest is a loggia, opening on an enclosed terrace used for outdoor reading. Service entrance and unpacking room on lower floor with lift to bookstack. An exhibition gallery on this lower level, used not only for paintings but for chamber-music, lectures or meetings, and therefore it is simply the club room of the typical California library en-

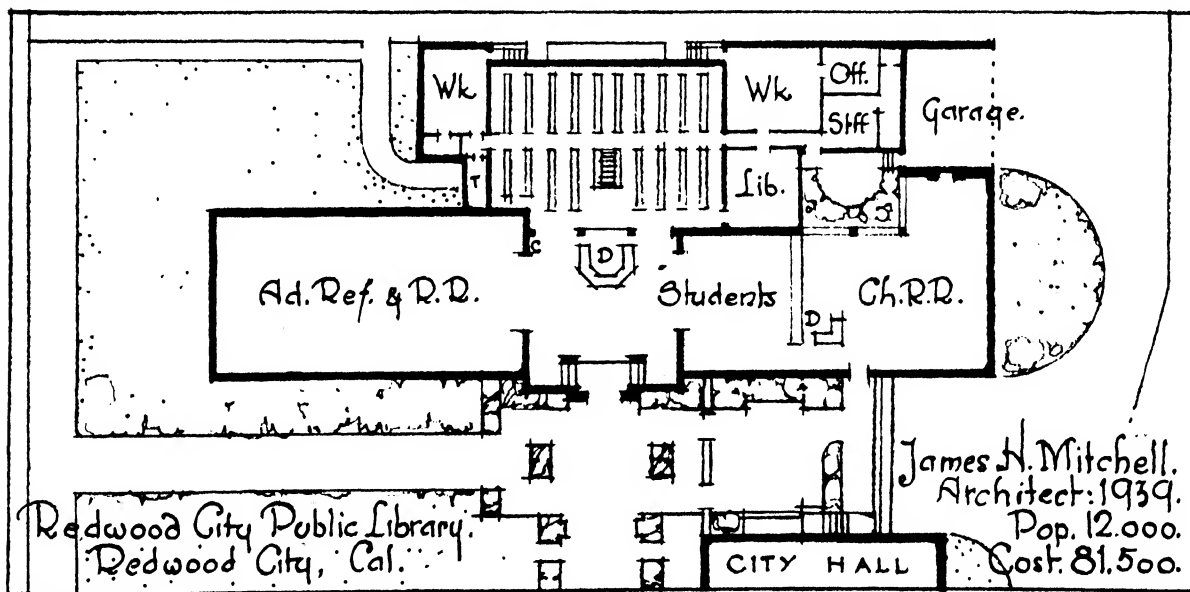
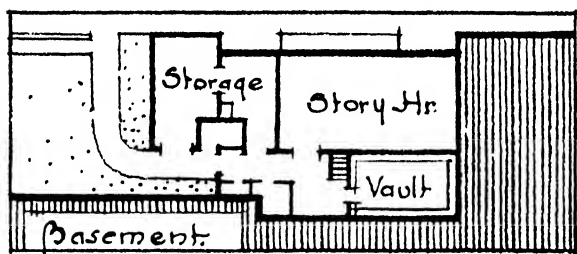
larged. A little museum and surrounding loggia on a tower floor above the library. These three levels warrant the wide and important stairway. Plan carefully worked out in all its details; but particularly in its clever adaptation to the varying grades and levels of the hillside.

The Redwood City Library is the latest, the largest, and the most complete development of the Los Angeles Branch theory of plan, extending horizontally instead of vertically. (See page 228.) There is a partial partitioning of the circulation room or lobby to separate the confusion and movement around the desk from the reading spaces; the introduction of a garage; and a recognition of the "Young People" or students of high-school age, a characteristic example of the modern trend toward the triple assignment of reading space to adults, young students and children in place of the former assignment to general reading, reference and children. All

readers are within sight of the desk. Adults and students are near the desk, catalog, and reference tools. Children, more remote but separated by only a low bookcase, can use the main entrance and be supervised from the desk at inactive periods, yet they have their own entrance with their desk close by it for busy periods. This arrangement is a step between the small library controlled from the central desk at all times and the large library with its children's department quite separate. All circulating books are in the open stack, so readers are not disturbed by persons looking for books to borrow. The stack is large and can be tripled by an upper and a basement tier, the story-hour room requisitioned for part of this. As in most Western libraries the work and staff rooms are ample. The small patio is for the use of the staff.

This is one of the good modern library buildings and repays careful study of both plan and equipment.

The character and habits of the citizen must be considered, so a detail of plan arrangement may be faulty in one community but successful in another. As in Palos Verdes the desk does not closely control the doorway; in some communities, the big cities particularly, there would be a loss of books.



CHAPTER 25: CONTROL BY CENTRAL DESK: VARIOUS TYPES: H, U, L AND THE TWO V'S

THE VESTIBULE of a Right-Left Plan may be enlarged and carried to the ceiling and a corresponding projection developed behind the desk, thus narrowing the circulation space, so the interior takes a form somewhat similar to the letter H. Or if the plot is narrow with good lighting from each side, or if for other reasons a compact plan is desired, the reading spaces of the Right-Left can be folded back parallel to each other like the uprights of the letter H. Either of these modifications produce the H, or Dumbbell Plan, as it is sometimes called.

The form becomes a definite and rather dignified architectural composition. The differentiation between the central circulation room and the two reading rooms becomes distinct. There is a tendency to increase the separation until the central desk has little oversight of readers. In a large library such as Indianapolis (Ch. 30), Richmond (Ch. 31) or Wilmington (Ch. 32) this is not a defect; but in a small library it diminishes control, necessitates a larger staff, or implies a confidence in the deportment of the public not always justified. Therefore it is a composition to be used with caution. It was popular in the past, but there are few recent examples.

With the exception of Bexley the plans shown here seem reactionary, with a conventional stateliness that seems disproportionate to their size and incongruous with present-day manners, methods and equipment. They are the conservatives among small library plans, composed like the older libraries as a grouping of individual rooms, each with its special function and each pleasantly proportioned in itself. This is in contradiction to the later theory of large spaces subdivided as little as possible and then preferably by screens or bookcases. The conservative attitude is shown in the double stairway at Longview, the remote stack room at San Pedro, the

formal and balanced treatment of most of the rooms. The functional problems were much the same as in the other libraries we have been considering, but the solutions are very different.

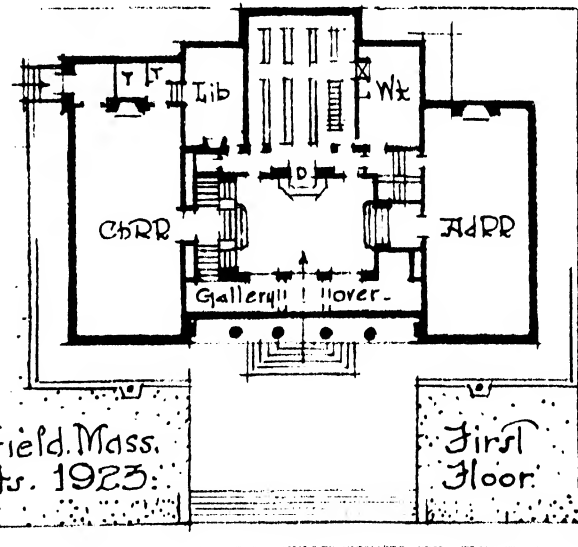
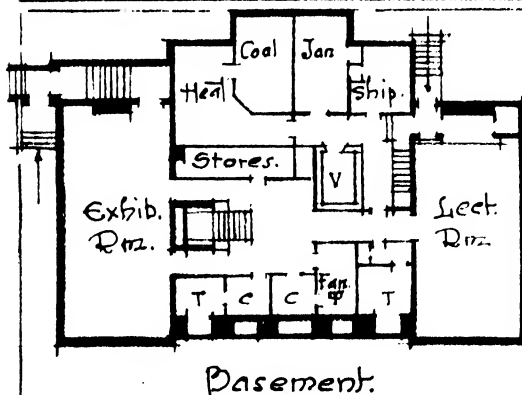
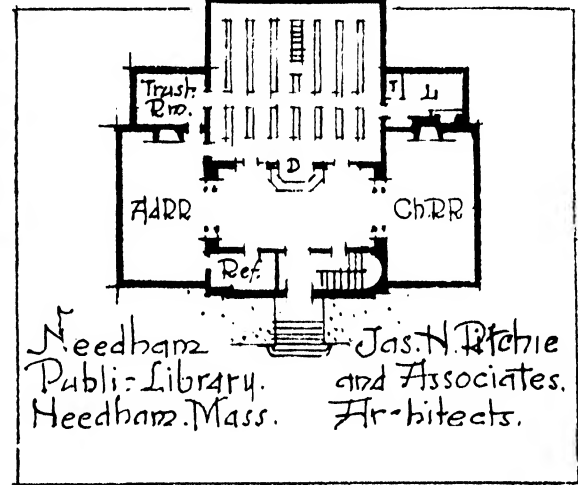
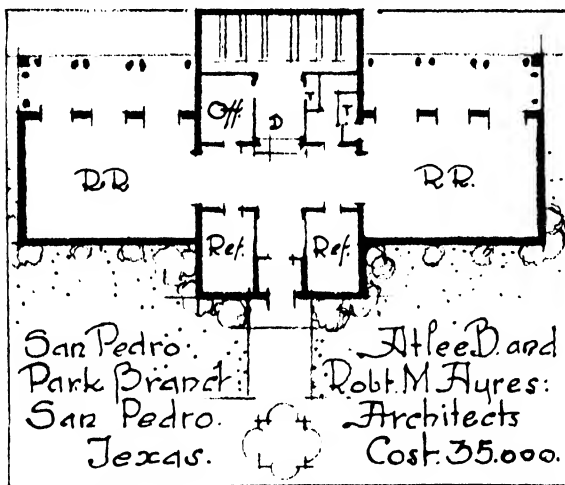
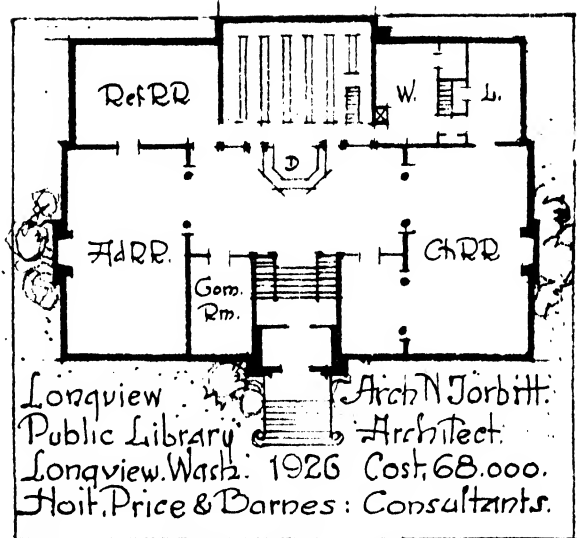
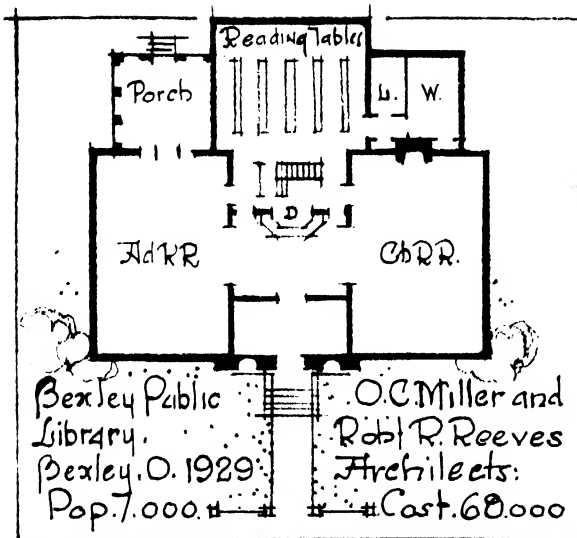
Bexley, Longview, and Needham are Sexpartite Plans.

Bexley with its short cross-bar supervises the readers effectively but constricts their access to the stack. The plan suggests the Quatrefoil, but that plan lacks a stack.

Longview improves supervision by composing the larger rooms in the form of an inverted U rather than an H.

San Pedro is an extended H with rooms set lengthwise to allow the summer wind to blow through reading rooms and open loggias on the farther side. With its two rooms flanking the vestibule, it might have developed according to the Radial Theory of supervision (Ch. 26) if it were not dominated by renaissance planning.

We include Wakefield in this series because it resembles the others in size and general placing of its rooms; but it is not planned for control from a central desk. In this it resembles West Hartford (Ch. 27) and the larger libraries at the end of Ch. 28. It is reminiscent of the Indianapolis Library (Ch. 30) in arrangement of levels; dramatic and picturesque, beautiful in proportion and detail but much subdivided; rather "multum in parvo" by modern standards, and consequently very awkward in its functioning. It is a community building as well as a library, the circulation room the general entrance hall. So this is placed between the levels of the exhibition gallery and lecture room below and the reading rooms above. A reading gallery is in front on a still higher level over the vestibule and the small rooms that flank it. It is a complex building; not sufficiently convenient nor economical in use.



THE L: In its composition this plan has little relation to any of the other types. Not a Right-Left with one wing bent back nor a Trefoil with one foil removed, for the position of the desk is quite different; nor a V, for there is no diagonal axis. Name derived, of course, from the shape of the letter "L." A composition recognized in the architectural schools but comparatively new in library use. The entrance axis may be long or short, the shorter the better; but the distinguishing characteristic is a cross axis near the entrance, continued as a long axis to one side and stopped abruptly on the other by some center of interest.

Possibilities of graceful silhouette, of picturesque and informal treatment outside and in; an excellent type of the two-reading space plan. A natural separation of children from adults without the need of screens. Confusion and noise in one part not apt to disturb readers in the other. No difficulties in concentrating desk, stack and work space. A long vista and sense of spaciousness on entering. It is not a compact plan. The reading rooms extend rather far from the desk. As a library, this may possibly be urged against it. Apt to be much outside wall in proportion to space enclosed; good in lighting possibilities but more expensive to heat than a compact building. Its good qualities make this general plan worth study.

These six L-plans should be compared in book-capacity, work and staff accommodations, compactness *vs.* grace of outline, treatment of the vista-ends. All but Westwood and Dana have an open bookstack; all ample work and staff space but Wellesley and Riverside, though Wellesley has a working gallery over the stack. All vista-ends interesting with fireplaces or large windows. Westwood and Dana reduce the width of the crossing which would have been enormous if the walls were carried through. They are compact and therefore easily supervised but the short wide wings and the constricted crossing do not make a graceful plan. Extending the front wing at the Dana by adding the clubroom helps the outline materially.

The long narrow rooms of Wellesley Hills have a peculiar charm, but it is questionable whether such faithfulness to medieval form is permissible at a sacrifice of the compactness and the short distance from desk to furthest reader that make for efficiency. The emergency exit doors near the wing-ends are unusual in a plan of this size. Compare Winchester, Ch. 27.

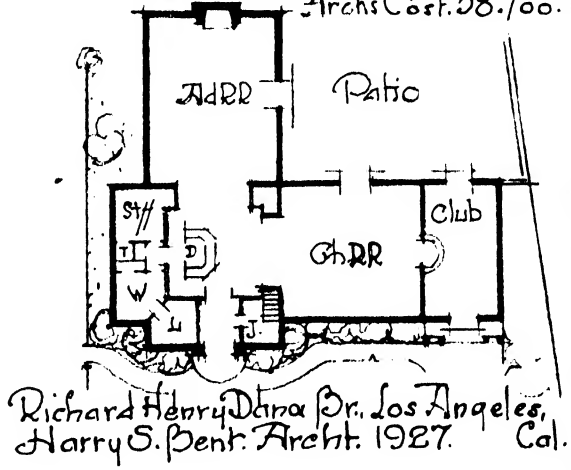
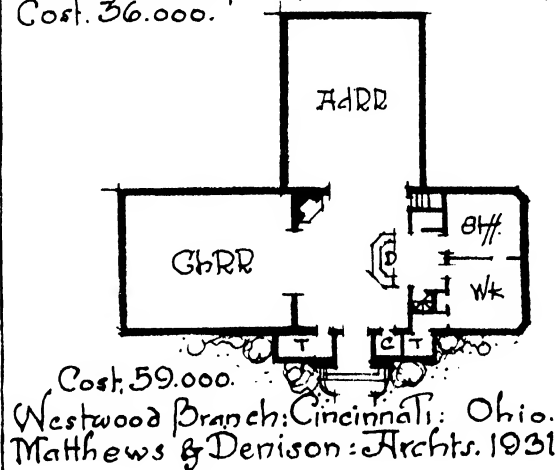
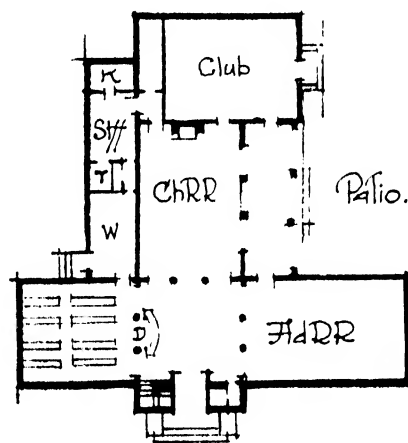
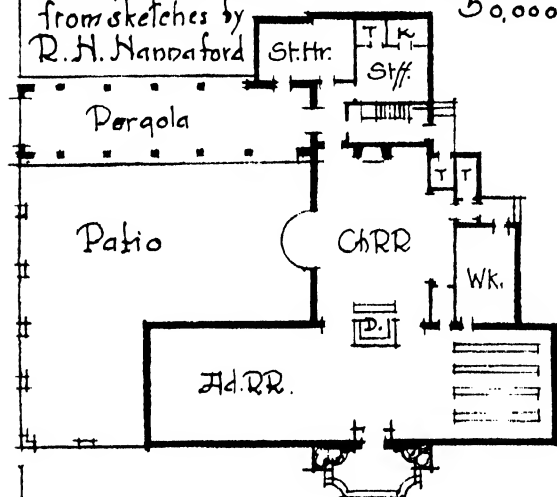
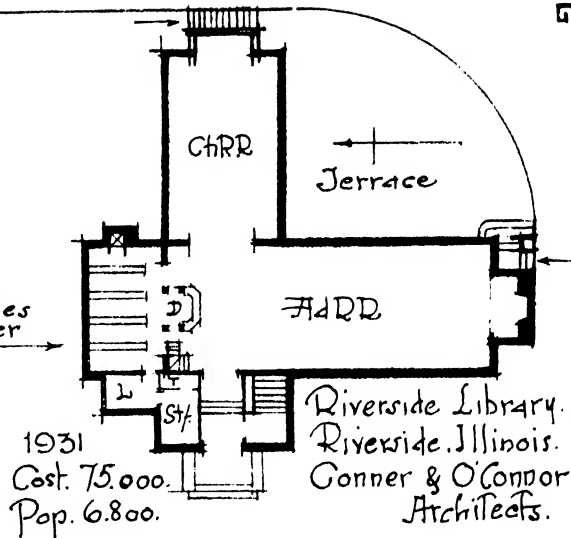
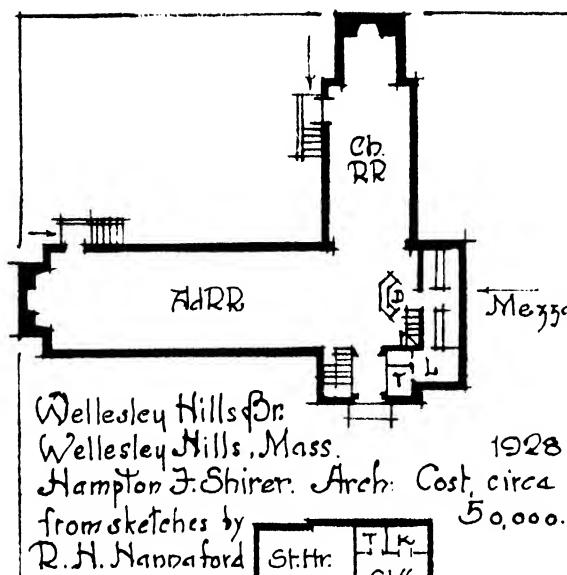
At Hill Avenue the desk was formerly in the typical position to the right of the entrance but was changed to accommodate certain readers who saw nothing disagreeable in a desk opposite the entrance and wished unobstructed access to the stacks, with space for a table or two nearby where they might glance through the books they thought of taking out. Desk functions well in its present position and closely controls entrance and exit to the children's room, though it does not strictly control the main doorway, nor is it close to the workrooms. This is the Island Desk, characteristic of the Trefoil and Radial plans described later. Plan recalls Trefoil in several respects. The pergola and walled patio with the bay of one reading room and the long windows of the other opening toward them are features of a particularly attractive plan.

The children's room at the Wilmington Branch is lighted with clerestory windows on both sides, giving a summer cross-draft next the ceiling. These and the larger windows under the pergola light the room adequately.

At Riverside the entire basement is given over to community purposes, with two large meeting rooms and a kitchen. Therefore the basement entrance is directly from the vestibule. Plot slopes down sharply to the rear, so these rooms are largely out of ground.

Westwood utilizes the broad space at the crossing, for children crowd to the library after school and must wait their turns at the desk. As at Riverside there is a complete basement, with auditorium, storage and shipping rooms.

Note: The largest library built on the L-Plan is that at Winchester, Mass., shown in Ch. 27, q.v.



MODIFICATIONS OF THE L: Port Washington is definitely an L-plan, but the crossing is much reduced. Smaller than the preceding libraries; less formal in composition; the two axes not completed. A librarian's office or workroom and a proportionately large two-tiered stack room behind the desk. Reading rooms and circulation space are not widely open one to another; supervision would be inadequate in many communities, for all readers are not in view of the desk. Conversely the movement around the desk does not disturb the readers. An economical plan; the maximum of reader and bookstack space, the minimum of entrance space. Built on a high terrace sloping down toward the right, the receiving room and workroom are entered near street grade. A small plateau behind the building and the veranda facing it are much used for outdoor reading. An attractive little building in a picturesque setting.

Quincy is closer to the typical L, though it resembles Port Washington in ignoring the axis of the rear wing and in partially screening the front reading room from the circulation. Bringing the desk forward improves supervision; but the placing of the stack door does not correlate with the detailed design of the desk, causing confusion at this point. Placing of stairs excellent, as there is an important story with a children's room below and an important room above; but there may be confusion in reaching the stairway and a disturbing noise from it. It would be safer with a glass screen and door, or all enclosed as at York, or possibly even opening from the vestibule. This library, since the children are below, perhaps belongs in Ch. 27, q.v. An interesting plan, admirable in its freedom.

Durham follows Carnegie Diagram C, an early reaching out toward the L, compressing the composition into a rectangle. An efficient parti but the interior is apt to be ungainly and confused, the central bookcase projecting straight at one as he enters, the reading spaces approached casually through the corners. These difficulties might be eliminated by careful handling; the type is worth further development as

it has certain particularly good qualities of the L, such as the convenient grouping of desk, workroom, entrance, stairs and small stack (if there is one) and the virtue of a desk that is not set like a barrier across the entrance.

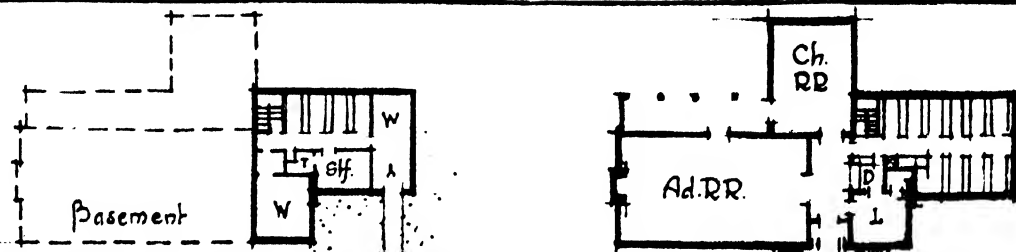
The Martin Library at York¹ is a modified L avoiding the weaknesses of Carnegie C by eliminating the rear reading space farthest from the desk and enlarging the other. Thus there are two reading spaces, for adults and children respectively, and the reference room proper has disappeared. If the children's reading room were extended to the left, the fact that the plan is essentially an L would be very obvious. Inadequate in size, it has been suggested that the reading space be increased by moving the children to the second floor or by adding a new children's room at the rear, converting the present children's room to reference or high-school use.

Site at the corner of two streets. The short frontage on the busier and more important is chosen for the entrance. The long adult reading room is on the quieter side street. Adults and children are separated as much as they can be while under control of a single desk. In the afternoon a staff-member is on duty in the children's room; at other times the main desk controls it, though the entire room is not in view. Cross-ventilation in both rooms.

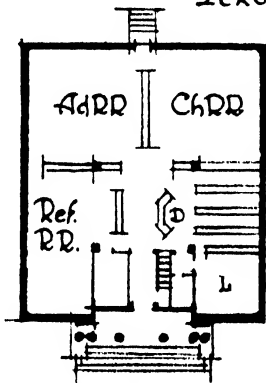
Generous working facilities around the desk. It receives proper daylight, is not in a draft from the entrance door and is en suite with the librarian's room, all much as in Carnegie C but developed further and not so crowded. Stairs lead down behind the desk to a basement workroom and through this room to receiving and staff rooms, so all the service is interconnected.

The position of the bookstacks is most unusual. Main stack the full length of adults' reading room, with a tier above and a tier below, much of it remote from the desk; a supplementary stack in a mezzanine over desk and librarian's room; another in a mezzanine over the vestibule, the last two connected by the stair-platform.

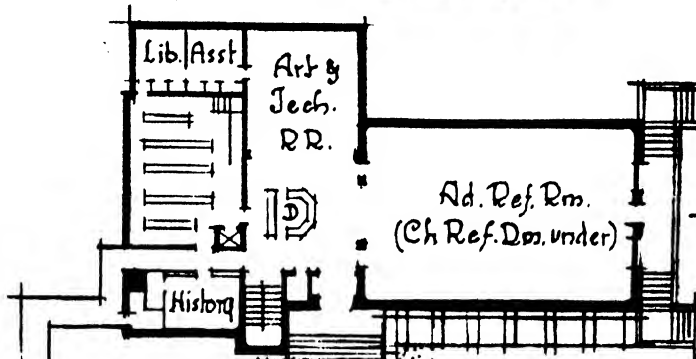
¹For an analysis of its development see Ch. 8.



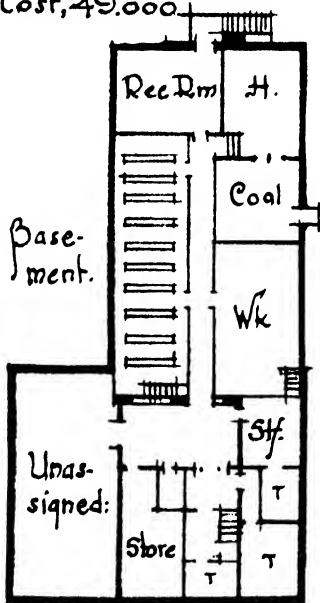
Port Washington Public Library. Port Washington. N.Y.
LeRoy Paxton, Arch., 1926. Pop., 8,000.
Cost, 36,000.



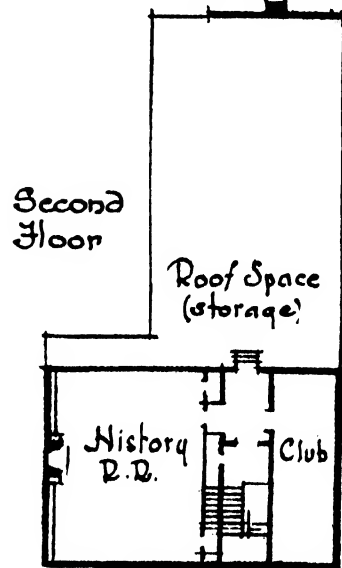
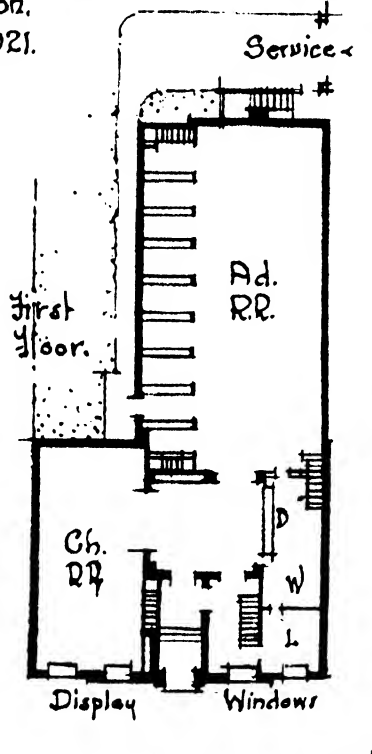
Durham Public Library
Durham, N.C. Edw. L. Tilton.
Pop. 25,000. Arch., 1921.
Cost, 49,000.



Addition to The Jos. Crane Public Library
Quincy, Mass. 1939.
P. A. & C. Coletti, Arch'ts.
Pop. 76,000. Cost, 200,000.



Martin Memorial Library. York, Pa. Y. G. Dempwolf, Architect. 1935.



Pop. 56,000.
Cost, 116,000.

THE SALIENT V: A corner plot at the intersection of two streets suggests a plan with reading rooms at right angles, but with a diagonal entrance directly into the space where the wings join, totally different from the L in composition. The wings may be parallel to the streets, extending along them, an arrangement we shall call the Salient V; or at right angles to the streets, extending back from them, and this we shall call the Reentrant V. Each has its advantage. In the first, with sides parallel to the streets, the entrance path is shorter and reading rooms are assured ample light on each side. There is space for an inner garden or for a future extension in the rear. In the Reentrant V, with sides at right angles to the streets, an effective forecourt is developed.

A diagonal axis, picturesque though it is, has attendant drawbacks. Not economical; develops triangular and other odd-shaped spaces difficult to tranquilize or to utilize to best advantage. The distinction between the L and the Salient V is clear and definite. The Salient V is a symmetrical composition around a diagonal axis with the entrance on this diagonal axis. The L has no diagonal axis, but is arranged around two axes that are at right angles. The desk in the Salient V is placed differently from that in the L, its relation to the workrooms must be different and the arrangement of the whole angle is architecturally quite dissimilar. The Salient V is an old library parti. Many of the much becolumned buildings of the early nineteen-hundreds are examples, but their entrance treatment was so elaborate and their interior arrangement so

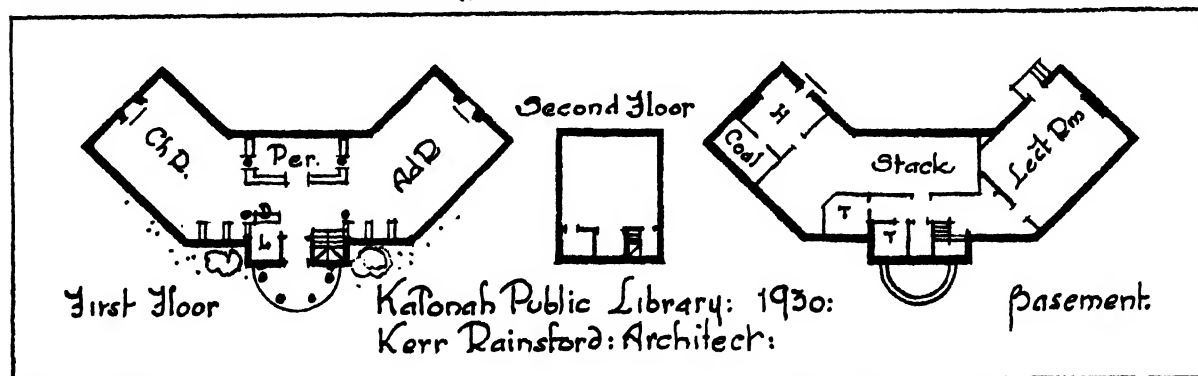
complex that a study of them is not helpful. Perhaps the Salient V has possibilities, but the diagonal axis complicates it at the start and simple efficient solutions are almost out of reach.

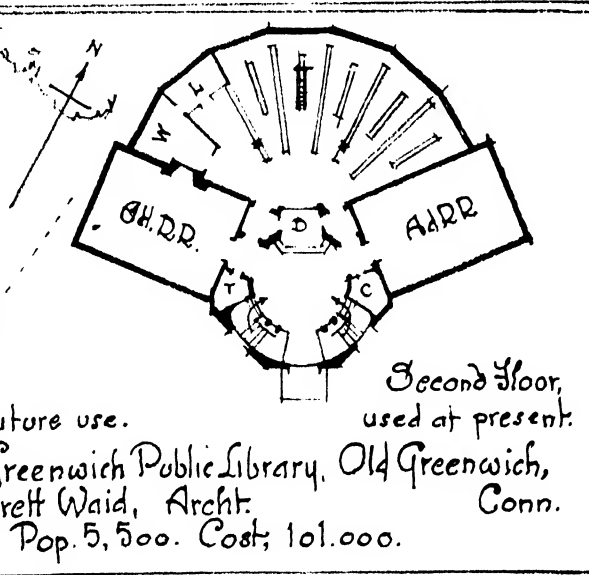
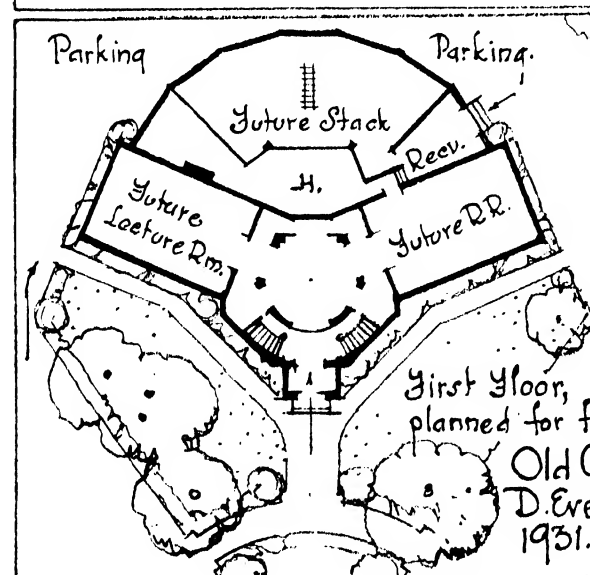
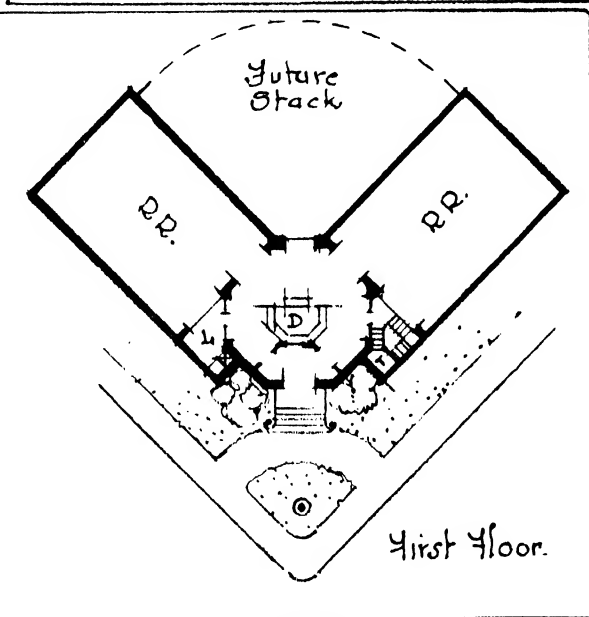
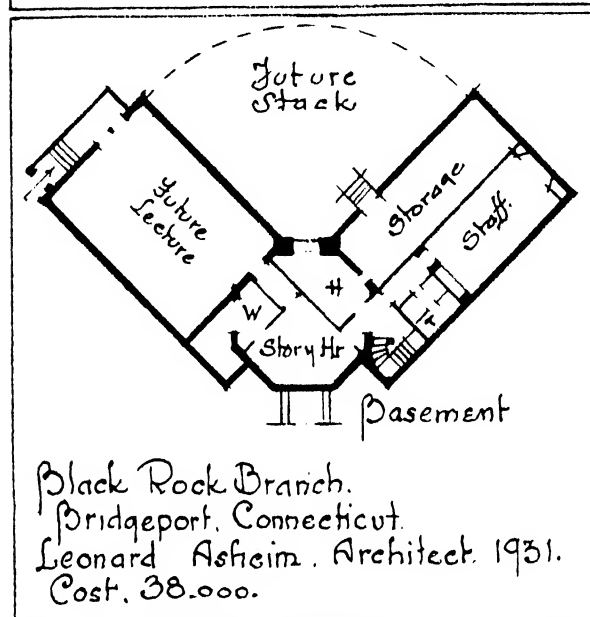
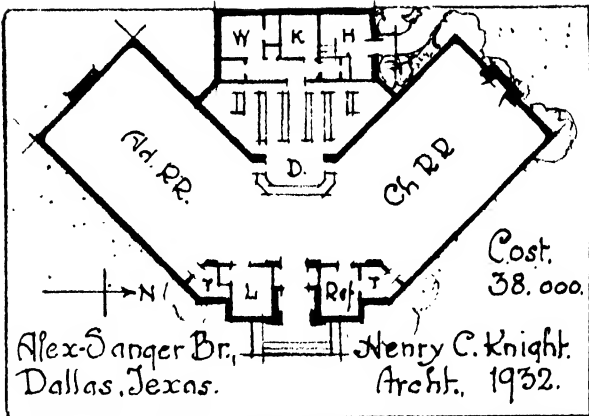
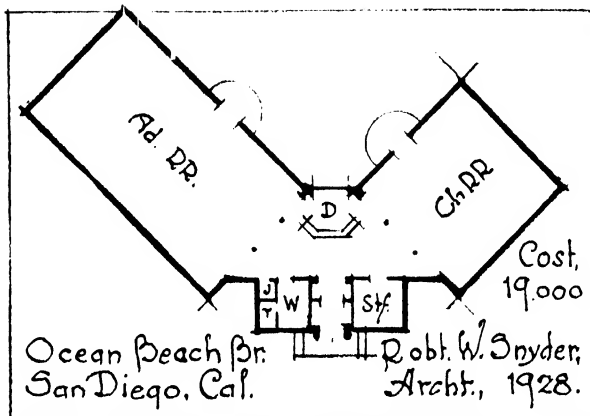
There is a temptation to fill the rear space between the wings. At San Diego it is left open, bordered with shrubbery and used as an outdoor reading room. At Dallas and at Old Greenwich it is filled with bookstack and work space, both of complicated arrangement. At Bridgeport it is to be a stack or a reading room, the present rear window sash transferred to the future polygonal wall. There is sufficient window-area in the front and end walls to permit loss of the rear windows.

Adequate work rooms and staff rooms are difficult to find space for in the Salient V. Desks are in various positions but none seem quite satisfactory. The desk at Ocean Beach supervises the garden reading room; at Old Greenwich, the open stack. A reversed desk between doors would have certain advantages in this type of plan, for it would face the reading spaces and have natural supervision over them.

San Diego and Dallas are efficient buildings. The former won an A.I.A. honor award. Black Rock and Old Greenwich, with a more definite form at the crossing, are handicapped by useless walls and piers that interfere with supervision from the desk.

Old Greenwich resuscitates four generally discarded features: the radial stack, the elaborate renaissance design of the crossing, the predominant second floor, and the consequent importance of the stairway. The street-level floor is





kept for future use. We consider this plan reactionary, a warning rather than an example. Despite its cleverness it fails in simplicity, economy and convenience.

Katonah is a composite type, with characteristics of the Right-Left, Salient V, and the Trefoil described in Ch. 26. The placing of the desk at the side of the door and the librarian's room behind it are suggestive.

THE REENTRANT V: This, too, has been a popular type but there are few recent examples. Like the Salient V and the L, it quite naturally separates children from adults, yet both are under direct supervision from the desk. Juxtaposition of desk and workroom is more easily accomplished than in the Salient V. The Plummer Library shows it, yet the desk might be nearer the door. The Dayton View Branch brings the desk forward as an Island Desk and makes no attempt to connect it to the workroom. As in many of the Trefoils (Ch. 26) the central space of Dayton View is screened off to form a circulation department, protecting the two reading rooms from the confusion of persons moving about the desk or open stack behind it. The entire interior can be supervised from the main desk but the children's room has its own desk, set alongside its own doorway, and used at busy periods.

At quiet periods the children can enter by the main doorway at the inner end of their room. Compare Redwood City (page 239) where they always enter at the inner end. The door at the outer end of the adults' wing seems to have been put there simply to balance the children's door. It has no obvious function. The building is economical to administer because elements are well related and all on a single floor.

Both Plummer and Dayton lie in an acute angle between two streets; but the axis of the Plummer bisects this angle, with the same relation to each street, while the Dayton View fronts

on the important avenue and the lesser street merely gives direction to the wings. A similar plot-condition confronted the Parkman Branch at Detroit (Ch. 28) but an entirely different parti was chosen.

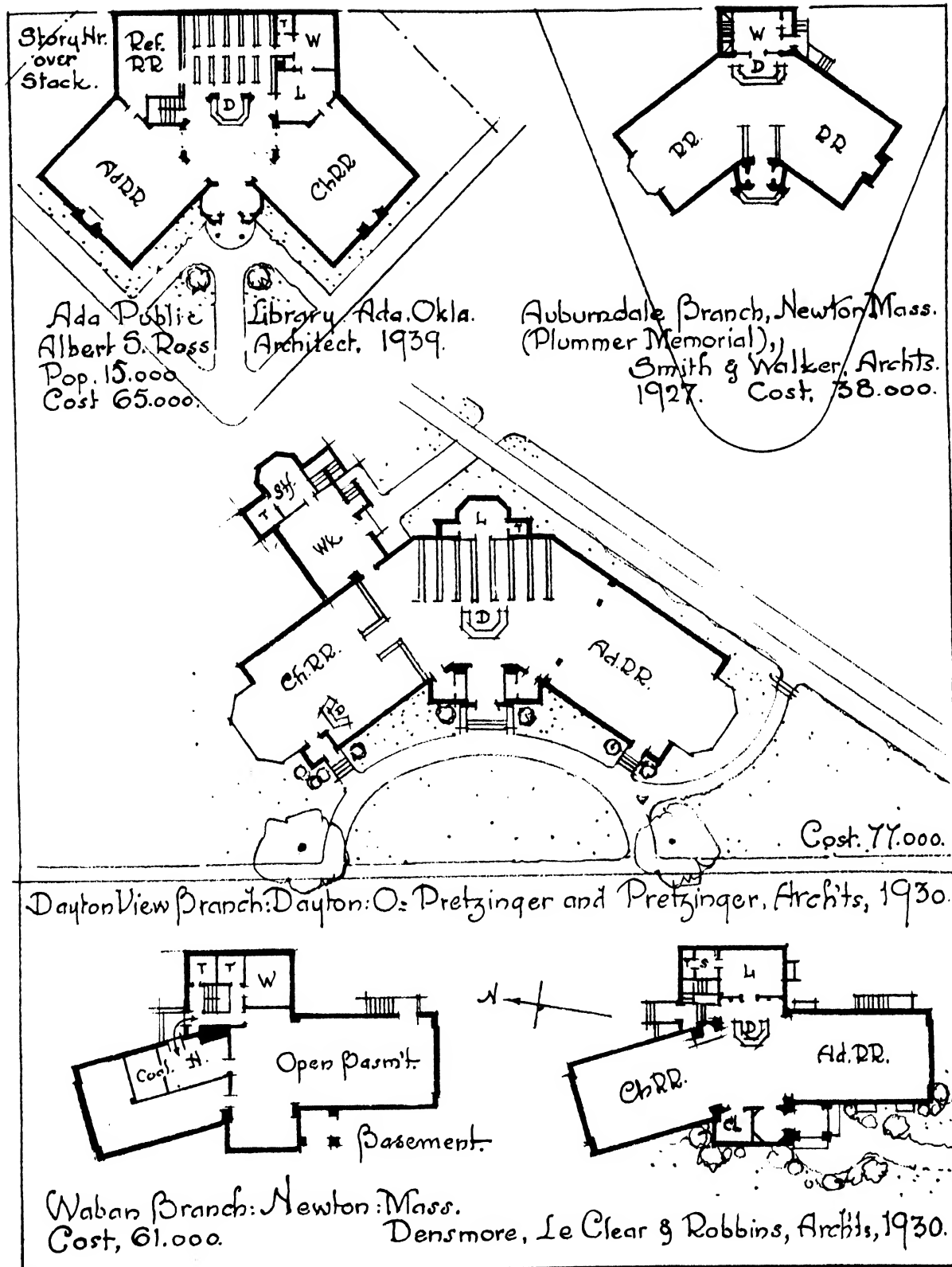
Meeting of wings and center in the Dayton View is rather awkward, soft, a defect that is bound to show in the roof-composition. It is carefully studied in the Plummer Library, well knit together, ingenious and interesting. But the Plummer has the fault we find in many New England libraries, of being too complex for its size, consequently too expensive for the number of books and readers accommodated.

The Ada Library attempts what is almost impossible, to treat the crossing successfully as formal architecture. The regular octagon almost invariably makes difficult and awkwardly shaped corners, except in heavy monumental architecture. Functional needs are well provided for.

One of the intrinsic difficulties of both the V's is the necessary shortness of the arms in relation to the mass of the center. The Waban Branch avoids the difficulty by not developing the center as a separate element nor attempting a formal balance. The plan is not a true V nor a Right-Left, nor distinctly between the two; there is no entrance axis; the desk is not exactly opposite the doorway nor definitely to one side; everything is placed wherever it seems useful, though the distance from entrance to desk and the position of the fireplace are perhaps unfortunate. However, this spontaneous informality seems to us a proper attitude in designing these smaller libraries. They have suffered in the past from far too much "Architecture"!

The octagon is peculiarly fascinating, an architectural siren! The Black Rock Branch (p. 247) shows the difficulties it led the architect into. Later, in the Radial Plans (p. 260) it appears again, somewhat less of a complication. The Old Greenwich Library (p. 247) is in worse case with an unmanageable hexagon.

NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.



RECTILINEAR FORMS OF THE V: The exact repetition of one side by the other seems essential to the highest formal dignity, but it is of doubtful merit in a library building of moderate size. The authors of the book hope for more freedom of design in future buildings, less rigid balance about a central axis, and it seems there are indications of such an evolution.

Burlingame has the central motif of the Re-entrant V, but it avoids the usual matching of the wings and by composing the rear salients parallel to the streets it quiets the composition and steadies the whole plan in its relation to the two streets and adjoining buildings. The scheme is admirable in its flexibility, a definite central form with complete liberty to extend in several directions as need of floor space may dictate.

In any of the V plans, the excessive space where the wings meet is apt to be an embarrassment. It may be merged with the wings or treated as a separate form. A comparison of plans demonstrates the range in possibility.

The shapes in Burlingame are distinct, in the Stevenson rather loose and clumsy. Burlingame joins desk to stack and workrooms, though not so intimately as might be. Stevenson isolates the desk and thereby attains better observation of the reading rooms, but loses the advantage of uninterrupted contact with stack and workrooms.

Burlingame has three tiers of stack and workrooms where the two wings join. The books are in close proximity to desk and to adult readers, who have free access to them, though supervised from the desk. Stack stairs close to the desk. Fiction because of its many borrowers is shelved in the stack, to secure quiet in the reading room. A small art section in the main floor stack is closed. The extent of workroom space, its compactness and its relative position are excellent;

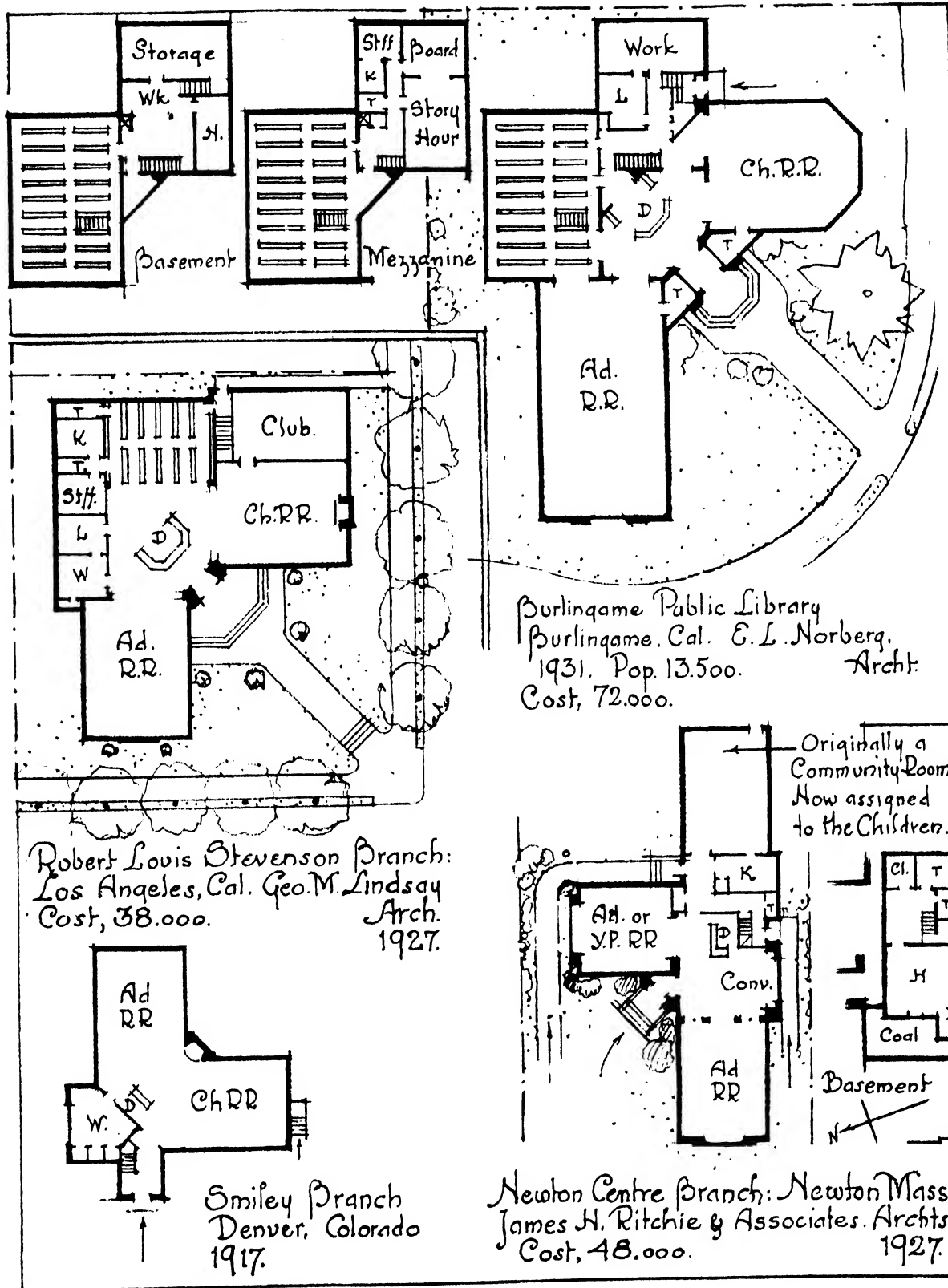
but on the first floor it seems unnecessarily cut-up by partitions. See Ch. 18.

The Newton Centre plan is not a consistent composition, for the rear wing does not articulate with the other parts. It was planned as a community meeting room with kitchenette and separate entrance, an all too common sacrifice of primary space to extraneous purposes. With increased use of the building for library purposes this space will be taken over for children, releasing the present children's room in the projecting wing. This can be made into an intermediate room, permitting joint use with adults of non-fiction and reference volumes, supervised by an assistant centrally located, who will doubtless absorb for this more vital purpose some of the "conversation" space opposite the entrance.

The Smiley Branch is one of the oldest of the V type, if it can be considered an example of the type. It has proved easy and economical to administer. The desk overlooks all the readers but turns only one side to entrance and exit. This arrangement permits desk and librarian-workroom to adjoin, but confuses the lanes of incoming and outgoing readers. Compare the Tulsa Branches and Katonah.

Two of these plans, Burlingame and Newton Centre, excavate only part of the basement. We have criticised this elsewhere, but in these cases it seems justified. Most of the supplementary rooms could be placed on the main floor; a lecture or community room was not attempted at Burlingame, and could be dispensed with at Newton Centre; the form of the plan permitted a central basement with articulation to the plan above and with comparatively short retaining walls separating excavated from unexcavated parts. As in most other matters concerning plan, a general rule does not apply in all cases.

NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



CHAPTER 26: CONTROL BY CENTRAL DESK: TREFOIL: QUATREFOIL: RADIAL THEORY

THE RIGHT-LEFT plan is essentially a two-reading-space plan. When there is a space at the center-rear it is used for bookstacks; occasionally for a workroom. But this rear space is under direct control of the desk and when no bookstack is required it may be developed as a third reading space. The relation of the three spaces is like that of the three lobes or foils in the Ace of Clubs, with the stem as the entrance. This is the *Trefoil Plan*.

The desk is placed so one person can supervise the entire interior and control entrance and exit. It is really the Radial or Wheel plan in its simplest form, the desk as the hub.

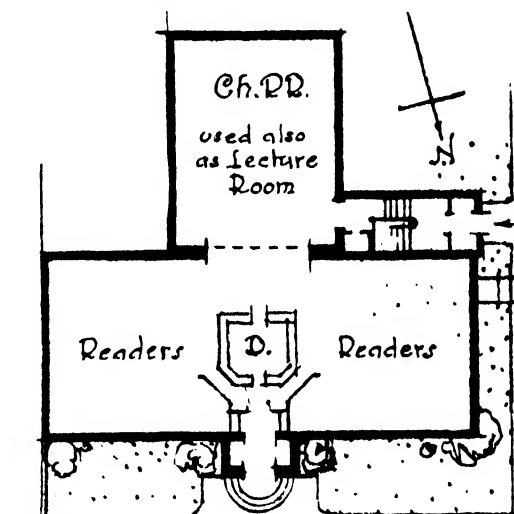
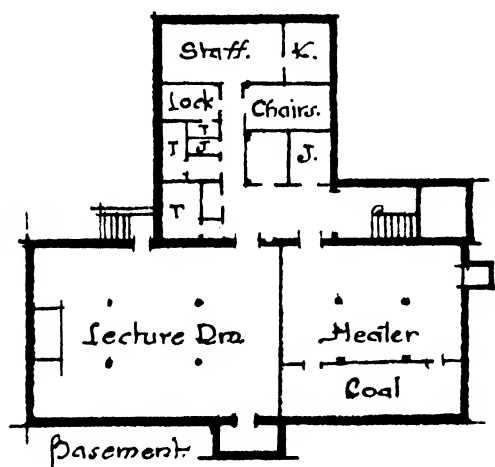
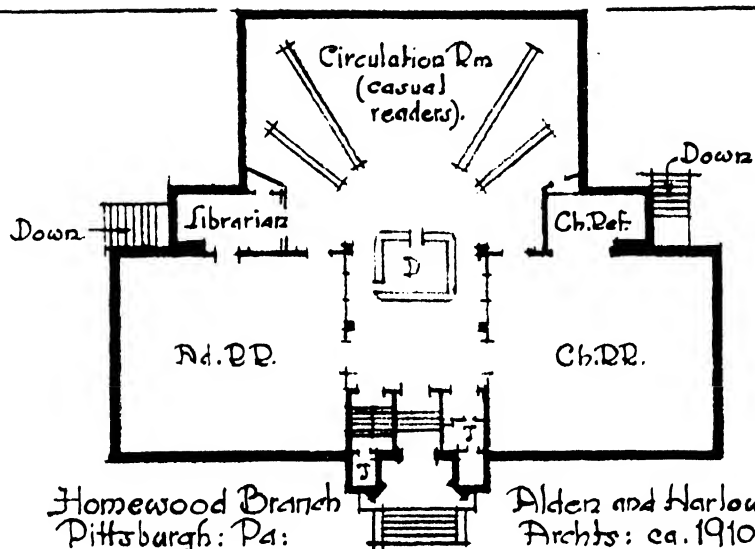
Pittsburgh was one of the first cities to experiment with the Trefoil in the design of its branches; hence it is occasionally called the Pittsburgh plan. The center foil was originally a stack, generally radial; but reading space proved to be needed more than book-storage, so in later branches it became a reading room. The inclusion here of these early buildings is justified, for their planning is modern in its theory of approach, functional requirement dominating traditional arrangement. Hence their influence on subsequent library plans and their right to a place in this series.

The early Philadelphia Trefoils used the center foil for a lecture room. Later this became a double-purpose room, used interchangeably as either children's room or lecture room. When used as lecture room, it is cut off by sliding doors. The stairway is arranged to serve it when the rest of the library is closed. All supplementary rooms are in the basement, reminiscent of the space-allocation of the Carnegie Leaflets; the plan suffers from lack of a workroom on the main floor; routine work here is limited to the desk enclosure. As in most Trefoil plans, the desk has a skylight over it.

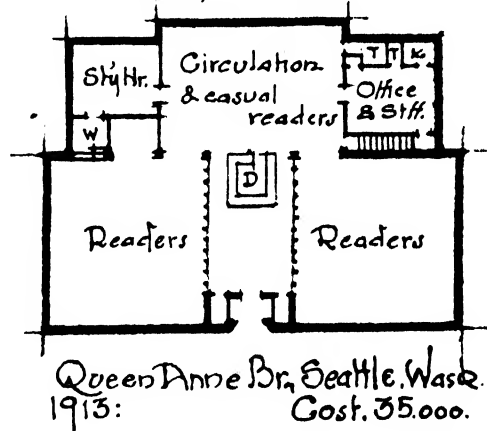
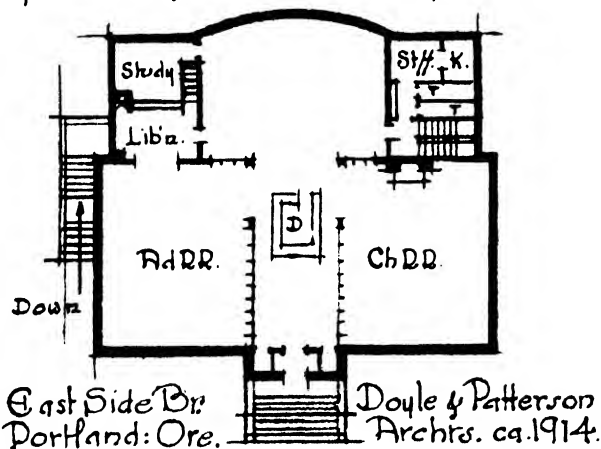
A deep Trefoil with the rear corners open is a defective plan, for these corners can seldom be used for architectural effect and there is little space elsewhere for workrooms. Hence it follows that they are usually filled out, wholly or in part, by supplementary rooms that do not require supervision, such as work, staff or administrative rooms, until in most cases the outline has completely lost any suggestion of a Trefoil and has become a Rectangle or Square, divided thus into six parts. The *Sexpartite Plan* was described in Ch. 24 as evolving from the Right-Left Plan, with its center-rear a workroom or an open bookstack. Here it appears as a development of the Trefoil, its center-rear a reading room.

If the rear corners are reading rooms and the center-rear used for supplementary rooms, another type of the Sexpartite Plan develops which we will call the Quatrefoil and discuss later in the chapter. All these Sexpartites are compact, close-knit, economical to administer. In the North and East they tend to approach a square in outline and so might be considered especially adapted to cold weather with the minimum of exposed wall in relation to floor area. When summer air-conditioning becomes general the same reason will make them equally efficient in the South. Usually there is a complete basement; consistency suggests compactness vertically as well as horizontally.

The Portland and Seattle branches are typical examples of the Trefoil composition in the Sexpartite Plan. Characteristic of the earlier examples are the open screens that flank the desk, extending back from the vestibule and dividing the circulation area from the reading room, not only to keep out the noise and confusion centering around the desk but, like the metal rails of older libraries, to compel everyone entering or leaving the reading rooms to pass close to it.



Greenwich Branch: Philadelphia: Pa: Philip H. Johnson: Architect: 1929.
Cost, 117,000:



EASTERN TREFOILS: In the Boston branches, as at Pittsburgh, the center foil was originally occupied by a small open stack room called the Book Alcove, but it is now being changed to a third reading room to provide space for students of high-school age. Thus the old assignment to adults' reading room, book alcove, and children is changed to adults, intermediates and children. Corners are taken up with rooms for work, librarian, staff, study, club, or for the story-hour. Boylston Branch wraps these supplementary rooms around the center foil, lighting it by clerestory windows. Whether first-floor space in a library of restricted size should ever be used for a clubroom or lecture room is questionable. Faneuil may be forced to reassign the space to readers and if possible find still other space in the basement.

The Boston branches were too small from the start and are badly overcrowded. Floor space would have been of greater value than their beautiful and costly material and finish. Hence the probable utilization of the basement, the general reassignment of rooms and, as in so many library buildings in like case, the taking over of lecture and meeting rooms and any other available spaces for primary library purposes.

The flanking screens vary in design. Low bookcases form their base. At Faneuil these suffice without superstructure. The exact position of desk varies, toward the front on the axis of the side foils or back at the start of the center foil. Also the position of the doorways through the flanking screens, sometimes in front of the desk as at Boylston, sometimes at the side of the desk as at Faneuil, often behind the desk as at Parker Hill or Howe. The screens of the Queen Anne Branch at Seattle have no doorways, forcing readers to pass around the screen-ends to the side foils. There are many variations in the examples throughout this chapter and in other chapters; but now the screen seems to be losing its popularity.

The Trefoil is deeper than the Right-Left; gives more room for a vestibule and a natural place for it between the screens. The desk may

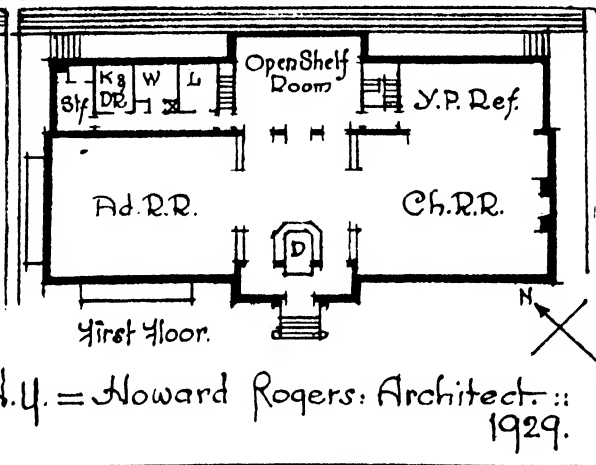
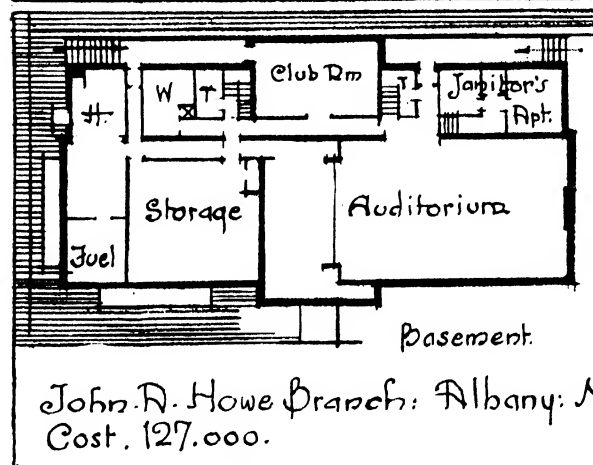
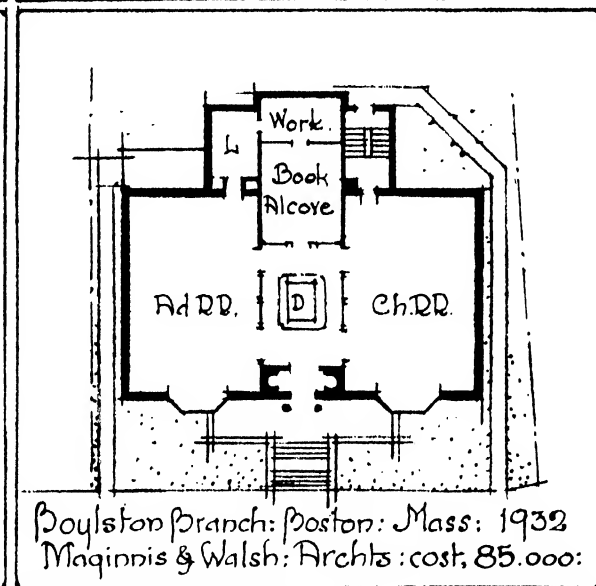
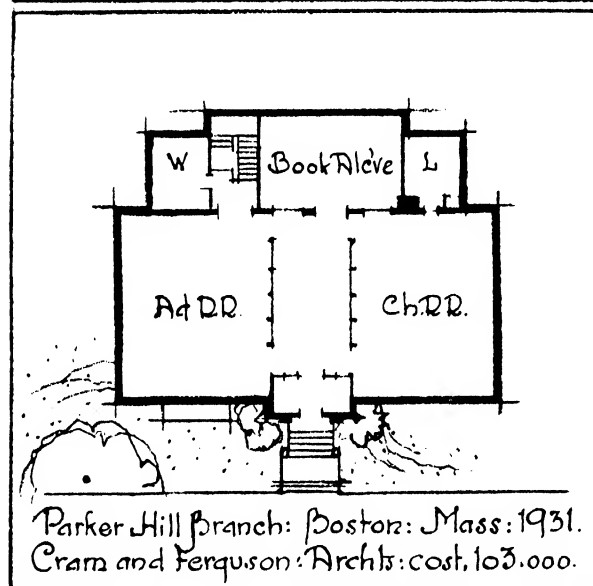
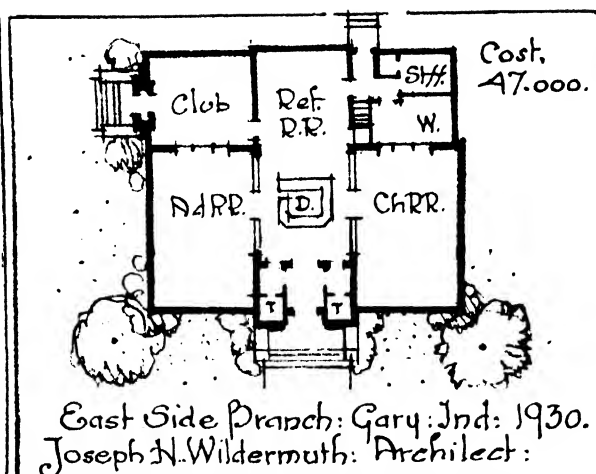
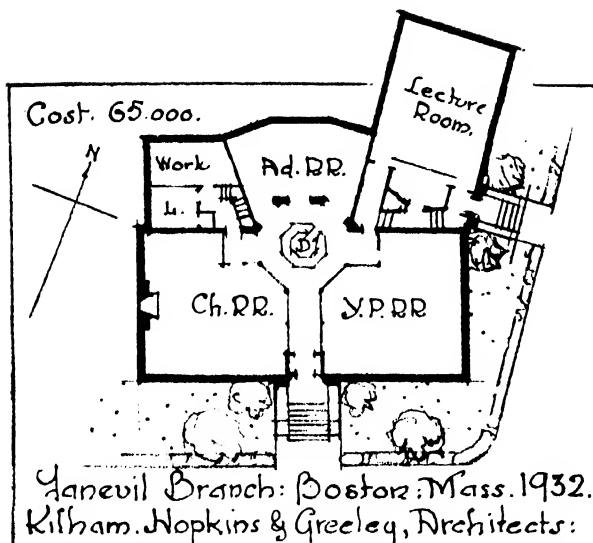
be set toward the rear to allow space at crowded periods for the public returning books to wait their turn in line before they pass the desk.

The Trefoil lacks a bookstack. The desk cannot be joined to a workroom, for it is surrounded by public passage space, an Island Desk set in the midst of a traffic-stream. Bridgeport tries to correct it with its "watchdog," described later, but the plan must be changed to a Quatrefoil before a satisfactory solution can be found.

The Reversed Desk, described in Ch. 13 and exemplified in the Howe Branch, seems particularly adapted to the Trefoil as its three sides directly face each of the three reading spaces. It is just as effective of course if the center foil is an open stack. Its principal weakness, which it shares with the island desk, is the difficulty of connecting it with a workroom; its secondary weakness is that, in crowded periods, there is little space for the public returning books to wait their turn in line. This is especially true of the children in the busy late afternoons when school is over. Its strength lies in its economy of space, its close control of the entrance without obtrusively confronting a visitor as he enters, its comparative freedom from drafts through the entrance doors, and the fact that desk attendants do not face the strong light that usually comes from the front of a building. It is steadily growing in favor in all types of small libraries.

These pros and cons are evident in the plan of the Howe Branch.

Its open-shelf circulation, with a few reader's seats, is placed in the center foil, and adults' and children's reading spaces in the side foils, with the usual glazed screens forming the divisions. The reference alcove off the children's room (used by both children and high-school students) suggests a tendency toward the Quatrefoil described later. The Howe Branch is notable for its large ratio of reading space to floor area and general economy of plan. It is a large building, occupying the end of a city block, ample in its services, with basement auditorium and club facilities and an apartment for a resident janitor. The plot slopes up toward the left and rear.



THE TREFOIL WITH "WATCHDOG":

The Trefoil branches at Bridgeport combine the reversed desk with a small glass-screened workroom set against the vestibule wall, an arrangement named the "Watchdog" by its inventor, the former librarian Henry N. Sanborn, and described here in Ch. 13 and 18. Contact between desk and work space is achieved (otherwise impossible in a reversed desk), supervision is excellent, and there is space for persons returning books at crowded times to form in line before they pass the desk. Work space though limited is ideally placed, privacy is not essential, and the arrangement has been copied elsewhere with and without the screens.

The Newfield arrangement is unusual, with workroom carried to the outer wall and separate doors and vestibules for adults and children.

The center foil in all the Bridgeport branches contains special reference books and is used principally by high-school students, so is an incipient "Young People's" room.

The Sanborn faces a park with diagonal paths that necessitated the interesting apsidal ends. The small room at the right of the vestibule is for the delivery of books from the receiving room below; at the left is a toilet room for general use with key kept at the desk.

The well-known South Avenue Branch will not be shown. It is not as successful as the other buildings, for it is very long and narrow, so readers at the ends are far from the desk and not under good supervision.

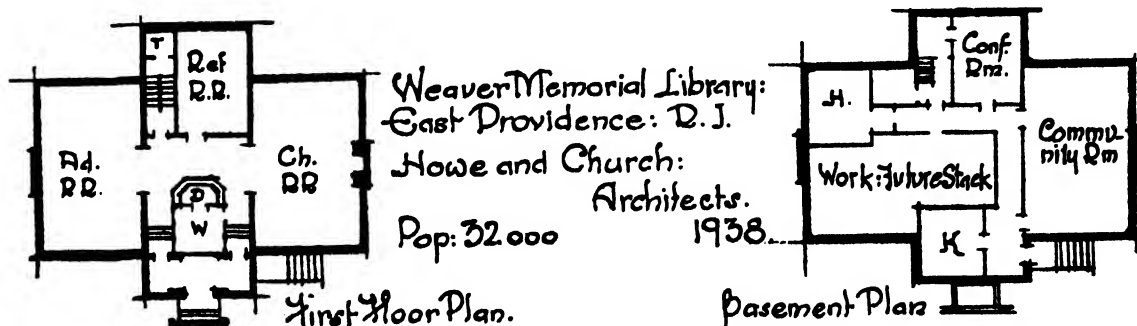
The Newfield Branch is short and compact, more like the Boston branches.

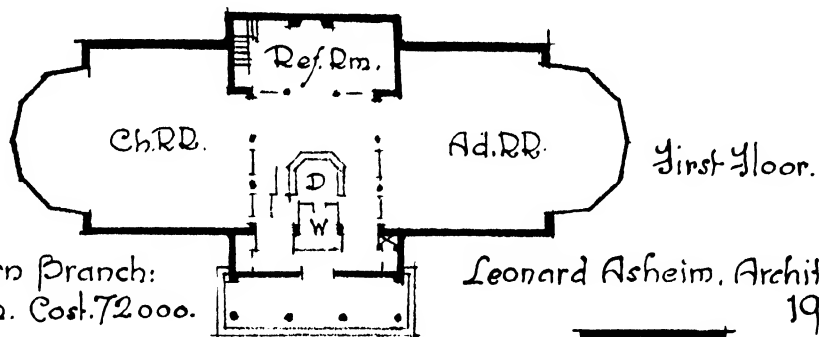
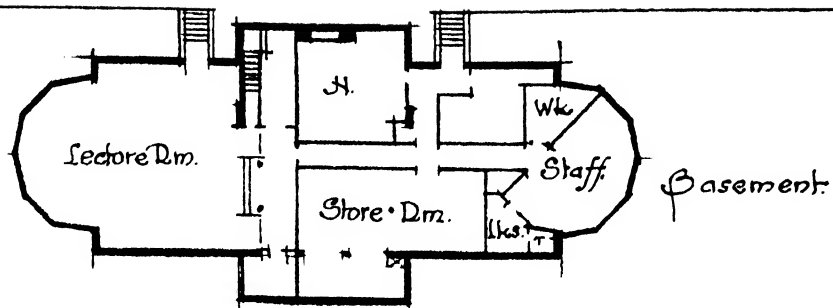
The more recent Providence branches, Wanskuck and Smith Hill, have followed the Bridgeport type of trefoil with "Watchdog" and reversed desk. Entrance doors are near ground level, with steps in the vestibule up to the two doors.

The Smith Hill has much the same entrance but treated in a different manner. Small show windows flank the entrance as in Wanskuck and a bulletin board is given a prominent place against the "Watchdog" wall opposite the door. Inside, like the others, low screens separate the different divisions. Unlike the others, the center foil is an informal space with great fireplace and settles; lighted by a skylight, for the building backs against an adjoining property; stair hall in one of the angles between the foils; reference room in the other (cf. Howe Branch, Albany). The wall shelving is supplemented by a small stack directly below the desk; difficult to service in a branch of this type, for stairs from the desk take very valuable space and, as its use is infrequent, an attendant in the stack is impracticable; so a lift is little help.

The Weaver library, the latest of the group, does not attempt the thorough supervision of the others, and is subdivided by partitions. We regard this as reactionary, and not suited to the usual community. It approaches the H plan in composition, with its intrinsic good and bad qualities. The spacious vestibule is in its favor.

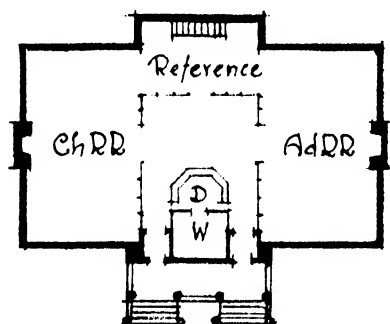
NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.



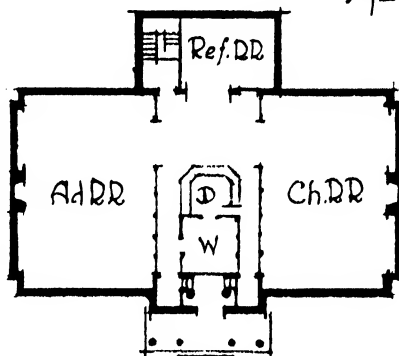


Henry N. Sanborn Branch:
Bridgeport. Conn. Cost. 72,000.

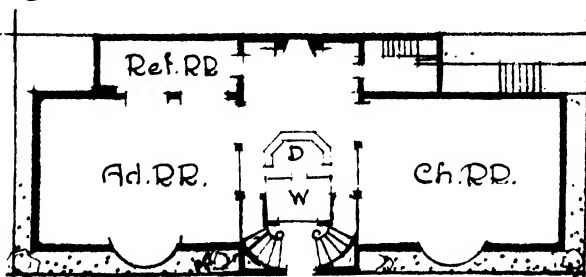
Leonard Asheim, Architect:
1923:



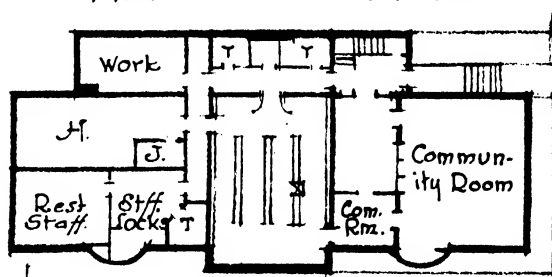
Newfield Branch: Bridgeport, Conn.
Leonard Asheim: Architect: 1922.
Cost. 35,000.



Wanskuck Branch: Providence,
Howe & Church: Archts: R.I.
1928. Cost. 63,000.



Smith Hill Branch: Providence: R.I. Albert Harkness, Architect: 1932
Cost. 65,000.



THE QUATREFOIL: This is the name we give the Sexpartite plan with four reading spaces in the four corners. It seems to have as great possibilities as any of the other small compact types, provided no bookstack is required, though even this may be introduced on a mezzanine. It is economical, gives maximum reader-space, ample room in front of the desk, possibility of joining desk and workroom; but all possibilities have not been developed as yet, and routing of traffic around the desk is not fully studied. The type might be said to originate from the Right-Left by the growth of a rear alcove from each of the reading spaces. Thus Claremont might be considered the first stage, then Schoolcraft with fully developed rear corners and the flanking screens, finally Glenville with four complete rooms each with its own entrance from the delivery space between the screens.

As in the Trefoils, side screens are usual. Central position of the desk important since the two rear foils should be under supervision from it. In every case we know of the desk is an Island Desk. We can find no example of desk joined to work space, though there is nothing to prevent it. Dearborn (Ch. 27) comes close to it, and might be considered a Quatrefoil.

The screens are common in city branches where there is a large attendance. They are glazed when much noise is expected, a few of them of distinguished design, others quite utilitarian. They may be rather dramatic, with interesting glimpses through them of the reading rooms beyond. But they are cumbersome, use up valuable floorspace and have not been installed in many recent buildings.

Mezzanines occur frequently, sometimes over center rear only, sometimes over rear alcoves also. Position and relative importance of stairs vary, depending on the importance of rooms in mezzanine and basement. Many of the Quatre-

foils are dependent on unobstructed light from the two sides, though this is not essential. Light only front and rear compels a wide shallow plan. *Form* as well as choice of *Parti* is dependent on *Site*.

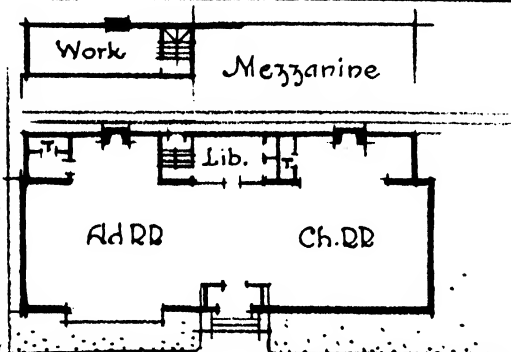
Most of the Quatrefoils assign the four spaces to Adults' Reading Room and Reference, Children's Room and Story Hour.

Glenville recognizes the high-school age (Young People). It is in a congested residential section, handling heavy reference work for them. The adult reference and young people's rooms are at the left and right rear of the main floor, close to staff and workroom. Supervision and reference work can be handled with little loss of time and doubtless some of the reference books are used interchangeably. Work space rather scant; the area given to club rooms in the basement unusually generous. Entrance terrace is effective as a setting, though it creates problems of snow removal and supervision. The exhibit case built into the masonry balustrade is of much interest.

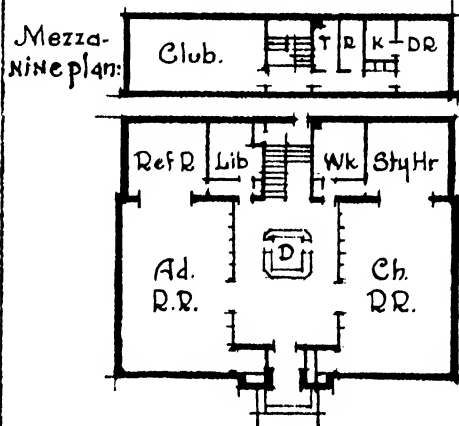
Peculiar to the Brooklyn Branch is the central stack in two decks, the upper deck continued over the work and librarian's room, all freely available to readers; convenient to the desk but curtailing vision from it. The position of the desk, next the vestibule screen, is like a reversed desk. The *parti* is original and suggestive; but faults are obvious. The long steep flight of steps at the entrance is one of the worst.

Longmeadow has certain qualities of the Quatrefoil but is not a fair example of it. It is a compromise, attempts to avoid the suggestion of efficiency in favor of the subdivisions of a private house or a small club and ignores the necessity of supervision over the reference room and the rear terrace. It might be compared with Amherst, Ch. 28. A very difficult compromise; for instance, the prominent charging desk appears to annul the domestic character desired. An open site; unobstructed light from all directions.

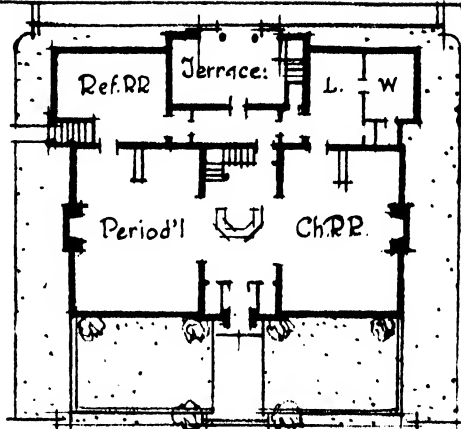
NOTE: Economy of plan-arrangement must not be judged by the cost of a particular building, for other elements affect cost much more. Quoted costs include equipment and fees but not the land.



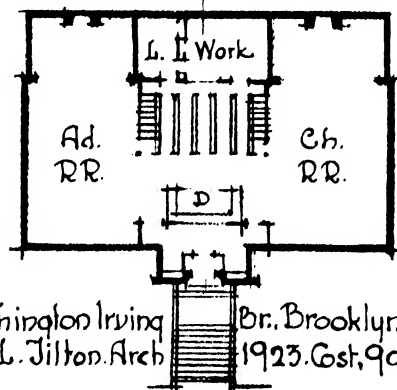
Claremont Branch: Berkeley, Cal.: 1924.
James W. Plachek, Arch. Cost. 29,000.



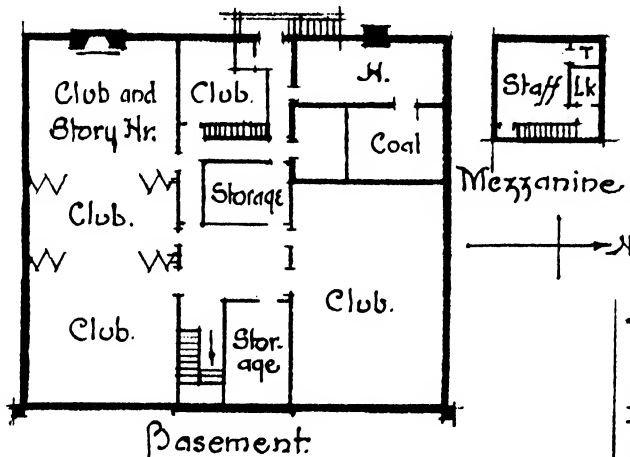
Schoolcraft Branch: Detroit, Mich.:
Donaldson & Meier, Architects.



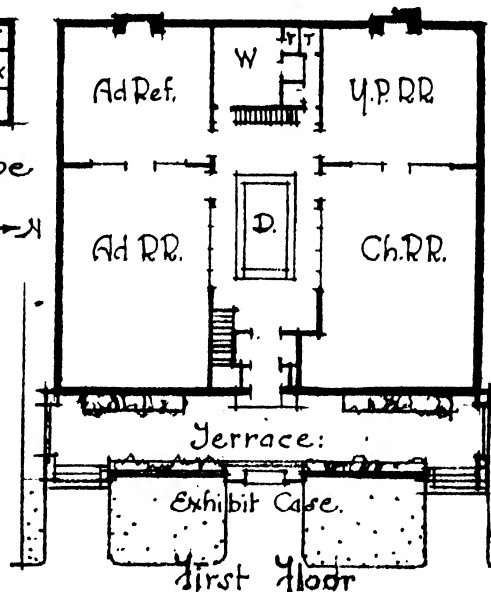
Richard Salter Storrs Library: Longmeadow,
Smith and Bassette, Archts. Mass.
Pop. 5,000. Cost, 53,000. 1933.



Washington Irving Br., Brooklyn, N.Y.
Edw. L. Tilton, Arch. 1923. Cost, 90,000.



Glenville Branch: Cleveland, O.
Walker and Weeks, Architects.
1927. Cost. 118,000.



THE RADIAL THEORY: Once in a while a pioneering librarian describes the ideal library as radial in plan, like a wheel with the desk as the hub and the reading rooms as spokes. This suggests a set form with a polygonal center and radiating rectangles. But a set form is not essential to the thought; the forms may be all irregular; but the essential idea is retained if there is a central desk overlooking reading rooms in all directions. An island desk is indicated, facing all ways.

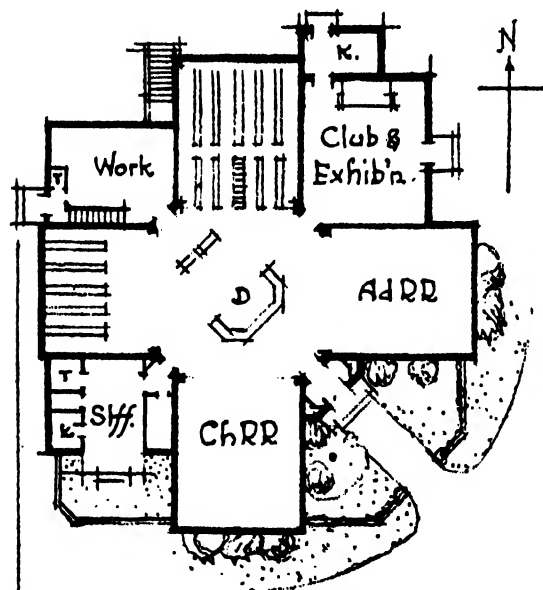
The Wheel, carried to its complete logical development, is the octagon with its desk commanding the various rooms or alcoves which radiate from it. To accommodate the width of the radiating rooms the octagon must be large with consequent waste of space around the desk. The space cannot be used to advantage. It is not suited for readers.

The desk in La Pintoresca overlooks entrance, children, staff, children's stack, work, adult stack, club, adults; supervision of them is natural and efficient; but comparison of their areas with the great area of the center is not re-

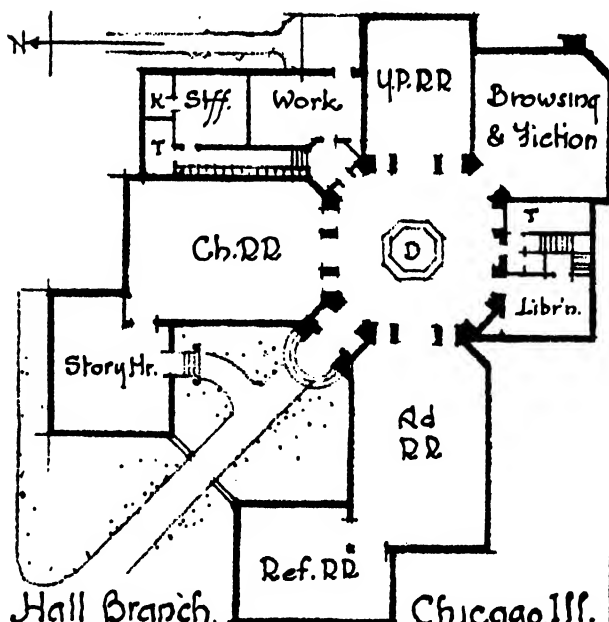
assuring. The central space contains, besides the desk, the catalog, consulting tables, pamphlet file and various displays. It rises above the wings, so is well lighted by clerestory windows. Stack rooms are unusually ample, with preparation for upper tiers. What basement there is provides for only a heating system and a storeroom for the Park Department.

In the Hall Branch, the octagon is placed farther back on the plot with the small rooms behind it and the larger in front extending out to form a forecourt. Again the octagon dominates in height and is lighted with clerestory windows. The diagonal corners of the reading rooms permit an advantageous increase in their width, though the form is an unpleasant repetition of the center.

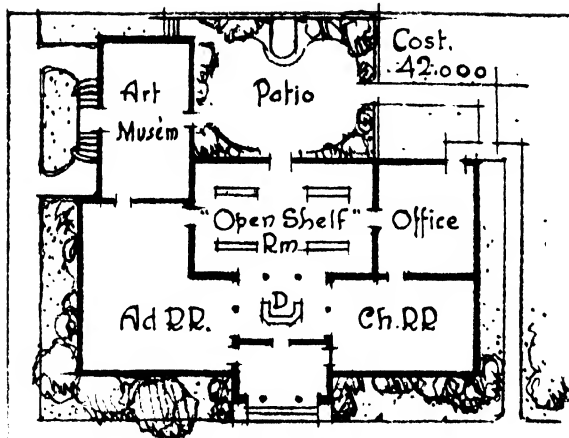
There is something not quite pleasant in the octagon. It is a complicated and unreasonably expensive plan and gives the impression of belonging to a more stately architecture. Applied to a small library, it results in cutting the entire building into small irregular spaces. Unless the wide openings in each of the four greater sides



La Pintoresca Branch: Pasadena:
Bennett & Haskell, Archts. Cal.
Cost 36,000. 1931



Hall Branch. Chicago, Ill.
Charles J. Hodgdon & Son, Archts.
Cost 123,000. 1932



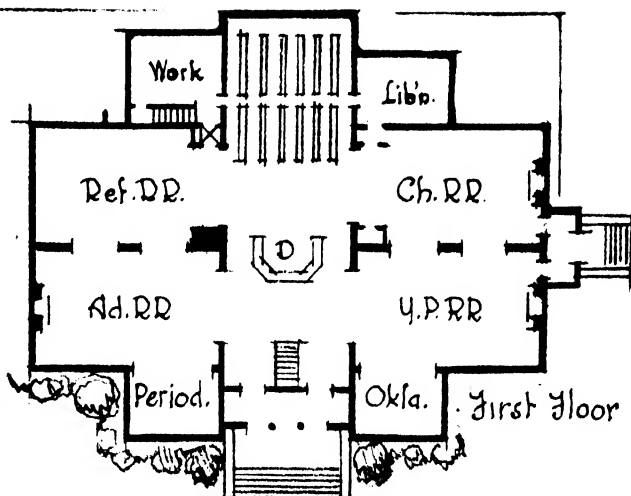
La Jolla Branch: San Diego, Cal.
Wm. J. Johnston, Archt. 1933:

should lead in a dignified manner to a dignified room, the octagon as a form seems a mistake. A stack room and a small stair are unworthy of such a position; there is bathos; something esthetically wrong.

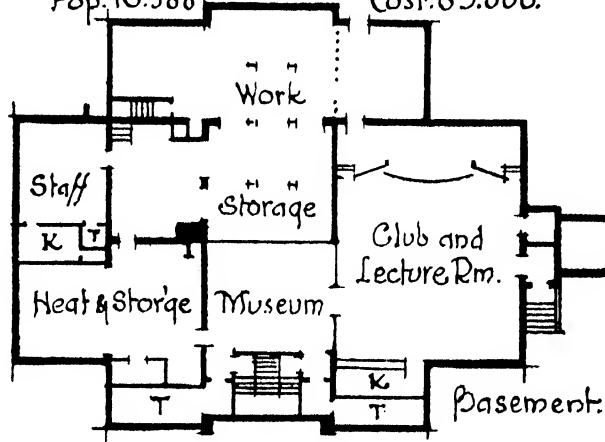
La Jolla proved an excellent plan for its own particular community. Strict supervision here is not necessary, a matter determined by the character of the patrons. Entering or leaving, one is not required to pass the central circulation desk, for the door from entrance loggia to adults' reading room is left open. In fact this room with its magazines, newspapers and popular books is left open every evening and on Sunday when no librarian is on duty and other libraries are closed; yet very little loss is reported. The door from the loggia to the children's room is permanently locked.

The large central room at the rear is a combination of open-shelf room, reading room and browsing room. Beyond is the paved and planted patio, much used in summer. The museum serves for exhibitions, for La Jolla is a center for painters. In case of expansion the museum would be taken for the children, the present children's room for intermediates, and the central room for an open bookstack. Such provision for probable growth is all too rare in most small libraries.

Ponca City Library is the Radial Plan in es-



Ponca City Public Library: Oklahoma
G. J. Cannon, Architect. 1935
Pop. 16,500 Cost. 83,000.



sence but not in form. Its central desk controls the entrance, six reading spaces and an open stack. This arrangement permits opening the entire library at quiet times with a single control; but the space is obviously too large for this ordinarily, so the children's room with its heavy afternoon use and the junior room with heavy evening use have their separate entrances and desks.

As in all the wheel plans, the desk is separated from its workroom. Some of the detail seems peculiar, *e.g.*, the positions of the basement stair and toilet rooms; but staff and basement workrooms are excellently related to the corresponding spaces above.

MODIFIED RADIAL PLAN: ISLAND DESK: The West Toledo Branch is a further departure from type. No suggestion of the Wheel in form but the Wheel in supervision. Ponca City was symmetrical about a central axis but West Toledo avoids this symmetry. Two cross-axes, but desk is not placed at their crossing. The reading spaces, ingle, and alcoves are varied in shape and size but the entire area of everyone is under observation from the desk. An unusually large percentage of the floor area is devoted to readers, and there is nothing of secondary importance on the main floor that equally well can be put anywhere else. Librarian's office and workroom on main floor and staff rooms in mezzanine are compact and convenient. Few entrance steps; main floor near grade. An unusually large auditorium completely below ground level, wide and clear of posts.

The outline of the plan takes shape primarily from the wedge-shaped plot and secondarily from the natural arrangement of rooms inside, with a projecting gable here and a bay window there as might enhance a room, developing after the fashion and in the pattern of a medieval English manor house. To make such variety successful a building must be rather long in proportion to its height, and there must be an occasional alteration of plan in deference to exterior composition; otherwise it would seem erratic rather than pleasantly irregular. The irregularity tends toward a refreshing informality, frees the interior arrangement from set restraint and permits one part to be related to another entirely according to its function as interpreted by its own particular librarian or architect.

Like the Parkman Branch at Detroit (Ch. 28) it seems rather large in scale for its medieval design. The walls of its English prototypes were

nearer together, the roof-spans much less. In area also these two branches are among the largest in the country. Divisions are avoided. The freedom of space is a great asset. Most plans suffer from the need of it, their floor space cut up by partitions, obstructing supervision or rearrangement. Both of these are excellent plans.

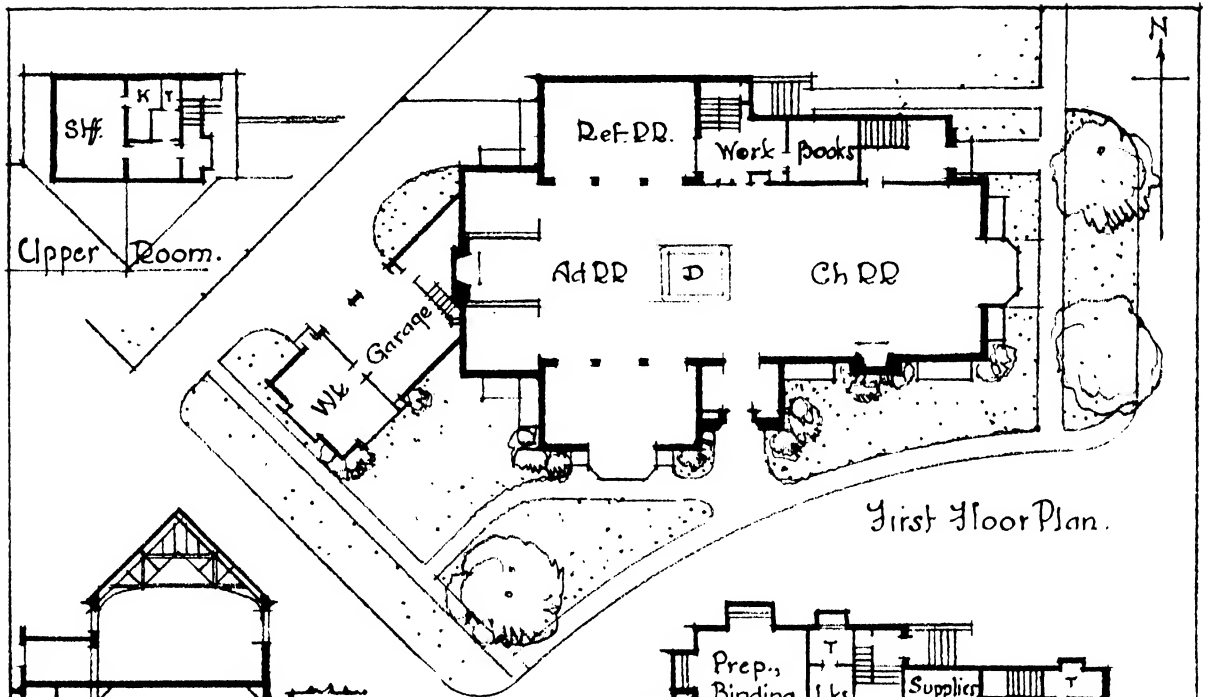
Mr. Carl Vitz, when librarian at Toledo, wrote: "The building is well planned from the standpoint of supervision. There is a differentiation of floor area on the basis of use. The placing of the librarian's office with reference to the entrance and the central desk, and with a window looking into the reference alcove is successful. The alcoves and the screen at one end, the fireplace, display racks, etc., create an atmosphere of welcome.

"The location of the librarian's office and the workroom on the main floor, and of the staff rooms in the mezzanine, is compact and convenient. The staff suite is well planned. The lounge is larger than is necessary but its size was determined by the room below. The charging desk made by a local firm, is carefully thought out in all its details. Its location off center made on the recommendation of the architects, has proved to be a happy one. We are indebted particularly to recent charging desks in Detroit for suggestions, although it represents largely an evolution within our own library system."

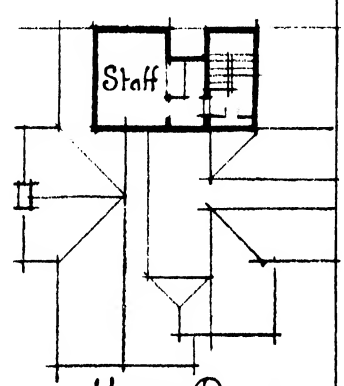
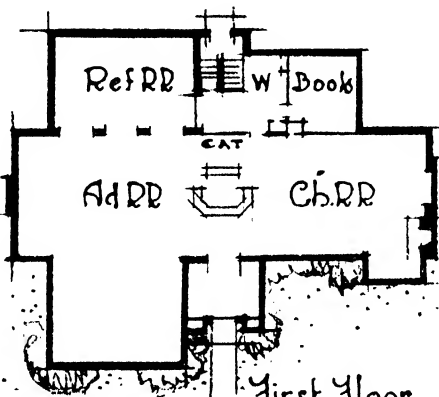
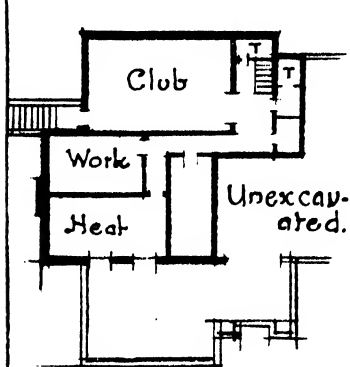
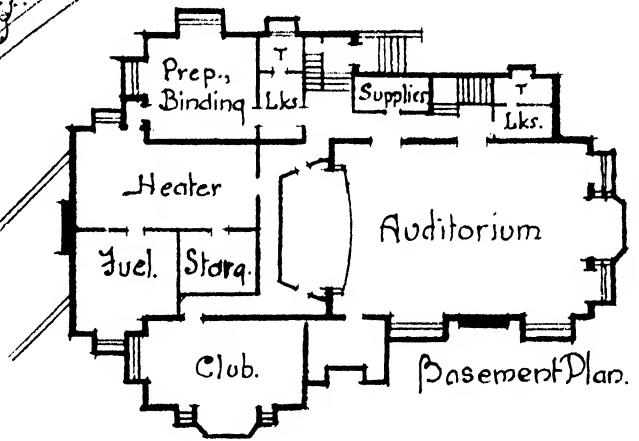
The later Toledo Heights Branch reproduces West Toledo on a smaller scale for a smaller community; little change except that the workroom and desk are closer, fireplace transferred to the children's room, only half the basement excavated and the auditorium omitted.

Highland Park, Ill., is an excellent example of the radial principle; but as it illustrates other plan characteristics also, it is placed in Ch. 27.

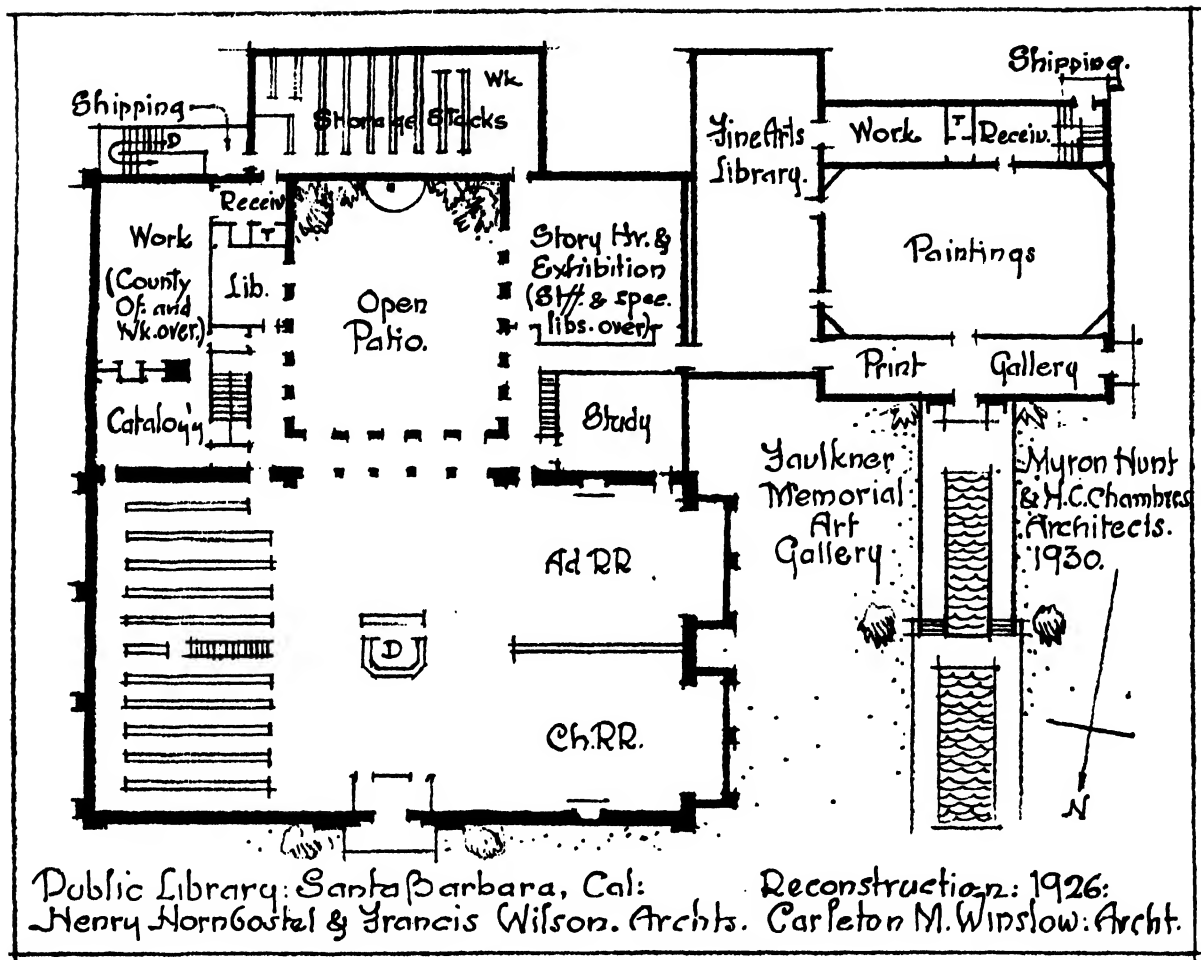
NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



West Toledo Branch, Toledo, O.
Gerow and Conklin, Architects.
Cost, 121.000. 1930.



Toledo Heights Branch, Toledo, O. Gerow and Conklin, Archts.
Cost, 45.000. 1935.



THE LARGEST RADIAL PLAN: Santa Barbara is a large library with an unusually simple parti, the Trefoil form of the Radial Plan. Centering around the island desk are reading spaces and the stack with its active book collection, all in one huge room, and all freely open to readers. The patio with fountain set in massed planting against its farther wall is definitely a part of the composition and as true a reading room as those under roof; a pleasant place, carrying out the old Mediterranean tradition of the atrium court. On sunny days a vast awning or "velarium" is stretched over it. One might wish the patio arches not so narrow, the central room not so strident in its architecture, the stack room more closely knit into the structure (though the possibility of removing it and doubling the reading

space may have been in mind). The plan is an example of "looking through to light" at its best, and suggests all sorts of possibilities despite its faults; the parti is original and stimulating; has the merits of an Open Plan; repays careful study.

The low building behind and to the left combines central and county work, branch, school and county material, temporary storage and material not ready for use. The Faulkner Art Gallery is separate from the Santa Barbara Library, the Art Room a natural link between them. Lawn and pools are a pleasant prospect from the reading rooms of the library. These rooms are lighted entirely from this side, a peculiar choice, for it faces southwest. Contrast the Tulsa branches, Ch. 24, which make the most of north light. See pp. 127 and 140 for photographs.

CHAPTER 27: CONTROL FROM TWO DESKS: CHILDREN SEPARATED FROM THE ADULTS

IN THE PRECEDING chapters there were always two reader groups, Adults and Children; in some of them several additional subject-groups; but all were more or less under the observation of a single Circulation Desk. When this single centering seems unwieldy or otherwise undesirable and a splitting up takes place, the first cleavage is between adults and children. They use few of the same books and do not mix well at a common desk.

Several libraries have special children's entrances and circulation desks to be used only at busy periods. At other times they use the main entrance and desk, so the plan is arranged for a single control, the children's entrance being supplementary, *e.g.*, Redwood City, Aliquippa and North Tarrytown (Ch. 24), Ponca City and the West Toledo Branch (Ch. 26).

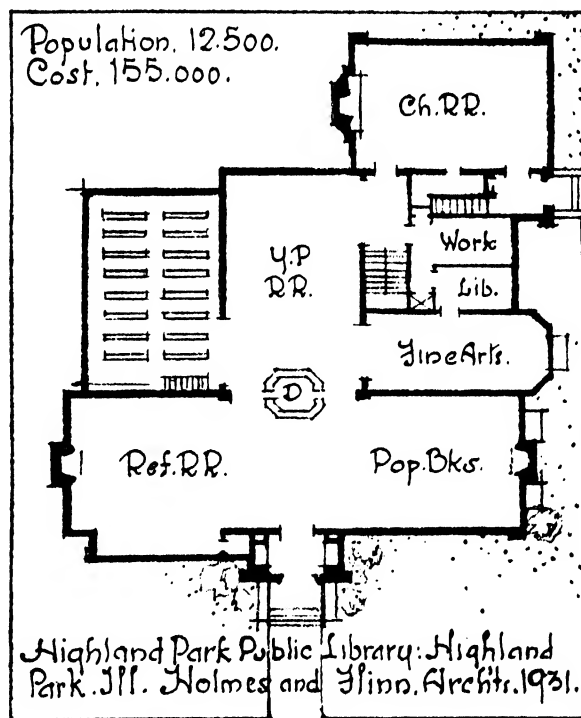
If the children's service is extensive the main desk may be relieved of this administration and control at all times. The building is then planned around two centers, a dual grouping and control. Adults are always given the main floor. Children may be either:

- (1) On the same floor—ideal for service; expensive; few cases.
- (2) On floor below—usually not favored; economical; numerous cases.
- (3) On floor above—becoming more popular; economical; many cases.

The expense of the single-floor plan is in first cost, maintenance cost and heating cost, but it is ideal for both staff and public; it requires no stair climbing; there is direct book truck service throughout; easy communication between the two desks; facility for adults, children and librarians to take advantage of all the library books; and the young folk gradually become familiar with their future surroundings. It may be better to pay for this highly valuable main-floor area and economize elsewhere.

At Highland Park the children's section is planned like a separate little branch library with its own desk and entrance independent of the main desk. The adults' section is arranged according to the radial theory of Ch. 26. Around the central island desk are five divisions, each in its separate space, all under the central supervision. The non-fiction collection is in a large stack wing, available for young students and adults both, opening where the two groups come together at the general delivery desk. Work spaces well grouped, but rather small. Highland Park is one of the interesting modern plans, well known by librarians and much admired.

The Athenæum at Westfield, Mass., and the Public Library at Teaneck, N. J. (both in Ch. 34), are other examples of this dual control on a single floor.



CHILDREN IN BASEMENT: In Sprague and Mamaroneck the children were originally on the first floor; but adult space became insufficient so the basement lecture rooms were fitted up for their use. The Sprague originally planned for this as a possibility. Whenever there is a light and airy basement it seems a fair guess that eventually the reading space will flow down into it, an argument either for or against a commodious basement, as you choose to take it. Even one of the large city libraries, New Orleans, has moved its children's room from main floor to a high-ceilinged well-lighted basement.

The first floor of the Sprague, a typical Right-Left, is interesting in its long basic rectangle suggesting the much-desired long roof-ridge, with the lower gables or penthouse rooms set against it, a pleasant irregularity of outline with projecting bay-windows and entrance porch. Work- and staff-rooms well grouped and near the desk; clerestory window behind the desk; no stack. We do not know how far the adaptation of the basement has progressed.

With such an informal plan, unfettered by the necessity of preserving classic dignity and symmetry, there can be considerable rearrangement or reassignment of spaces, or additions in several directions. As to the value of basement space, its evolution demonstrates it.

Mamaroneck, more rigid in design, is the H-form of the Right-Left Sexpartite, composed within a rectangle like the Carnegie diagrams, the 1918 plan in particular, but improving on it by introducing the mezzanine across the rear, a device which should be more frequently utilized because it gives convenient space at low structural cost. The columns by the desk are annoying, a tribute to architectural precedent. Work space in left rear corner rather scant, and far from stairs; rooms in opposite corner not under supervision; the result of a striving for balanced symmetry without realizing the importance of close relationship of work space. Evidently a close control is not required in this community.

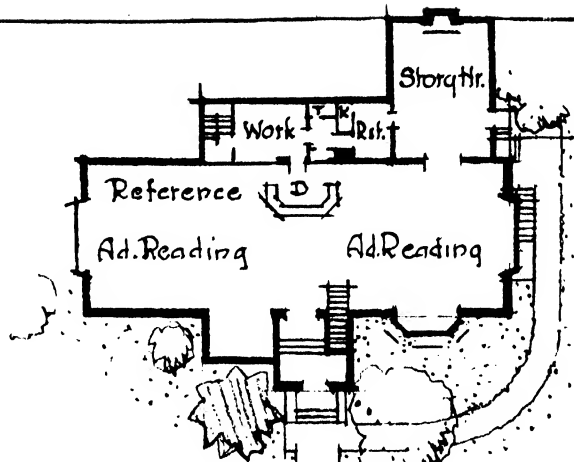
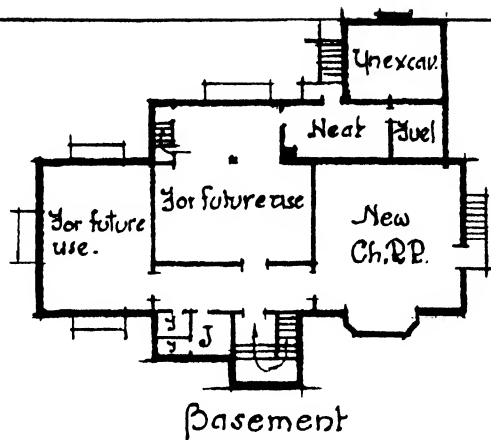
Bloomfield reverts to an earlier type of plan now generally discarded (*vide* Ch. 1), with stack at rear, separated from the reading room by an unfortunate interjection of stairs and other elements, making extra travel for all. A major objective in a small library should be to keep as much of the bookstock as possible close to the readers; remote stacks are obviously inconvenient. The plan of the front portion has characteristics of the Trefoil. Bookcases in place of the usual parallel screens. A great window at the end of the center foil, the "looking through to light," with its sense of airiness and space. Stacks in two tiers flank the high central aisle. Tables here where books may be briefly glanced through or studied at length. Most interesting, for it is tantamount to reading in the stack room, suggesting a college library or more particularly the "Flexible Library" proposed several years ago.¹ The stack is so long and most of it so far from the desk that the member of the staff acting as readers' assistant is placed at a table backed against the end window.

The main entrance to children's room and auditorium is under the front door. There is a secondary entrance by a stairway from the floor above. Another basement room, the former trustees' room, is now assigned to students ("young people"), an awkward place for them, far from the main reference material; but no other available. Workrooms (for school material, etc.) are in the rear, where the ground slopes down so the floor is near ground level. The children's room might better have been here, entered from the side, with outlook on the field behind.

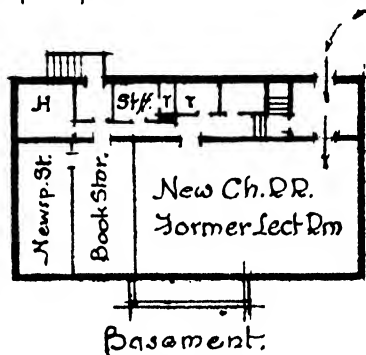
To a certain extent this is a community center; the auditorium below has a fairly good-sized stage; there is a large exhibition gallery in an upper story reached by the stairway beyond the desk.

¹A. S. Macdonald: "A Library of the Future": *Lib. Jour.* Dec. 1 and 15, 1933; and "Some Engineering Developments affecting Large Libraries": *A.L.A. Bulletin*, Sept. 1934; also B. M. Headicar, *The Library of the Future*, p. 120; George Allen and Unwin Ltd. 1936. 5s net.

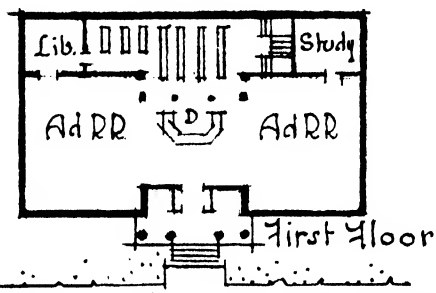
NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.



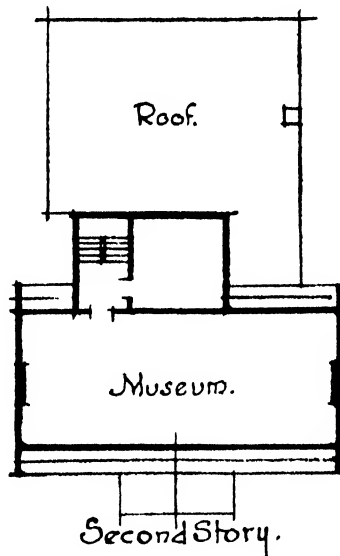
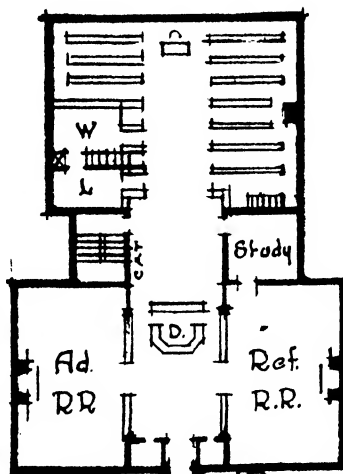
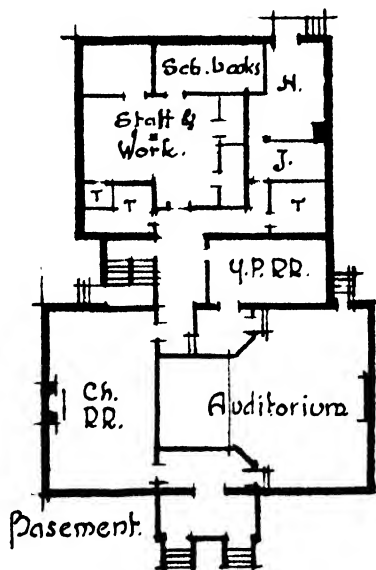
Sprague Branch: Salt Lake City: Utah: Ashton and Evans. Architects. 1928
Cost. 41,000.



Pop. 10,000.
Cost. 60,000.

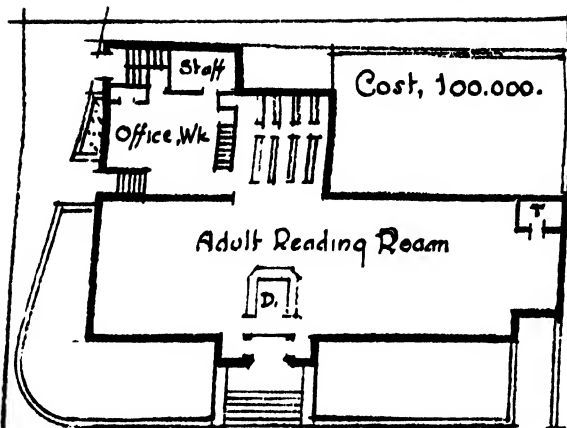


Mamaroneck Free Library. Mamaroneck. N. Y. Morgan French Co. Archts: 1927.

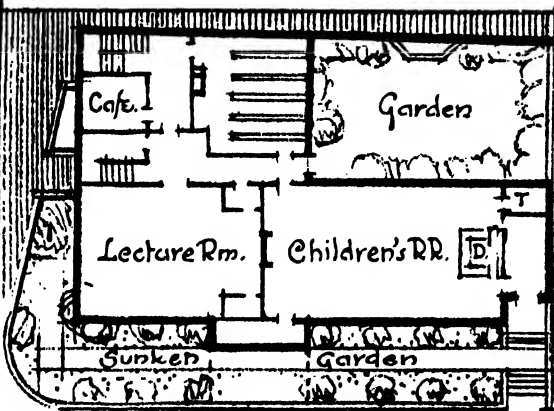


Bloomfield Public Library: Bloomfield

N. J. John V. Capen. Architect. 1927.



First Floor Plan

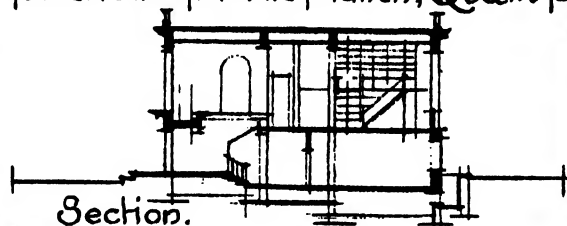


PROBLEM OF LEVELS: CHILDREN BELOW: The two floors at the Glendale Branch are one above and one below street level; but unlike Bloomfield the outside entrances to them are widely separated; thus the fact that one leads to a basement is not stressed. Comparatively new to public library planning is the planted moat or sunken garden, which solves several problems and is worth copying. From within, the basement ceases to appear as a basement; for its wide low-silled windows look out on grass and shrubbery backed by a trellised brick wall. Northwestern University Library at Evansville, Illinois, did this first on a large scale; then Philadelphia (Ch. 30), Queens Central (Chs. 12 and 30), Richmond (Ch. 31).

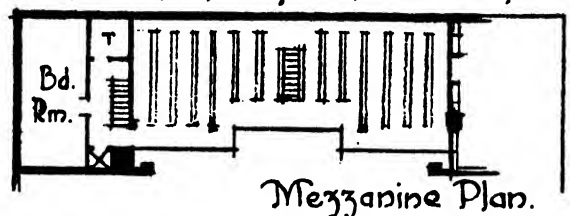
On the lower level at the rear is a garden, planned for the children but more used by the staff. Ample work space, book storage, general storage, and the usual lecture room with outside entrance; the large vestibule children require; a reversed desk.

The upper level is planned according to the Right-Left with Stack, not unlike some of the

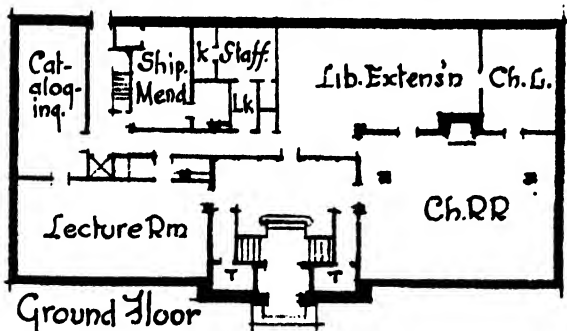
Basement. Glendale Branch, Queens Borough, N.Y. Geo. Young, Arch., 1936:



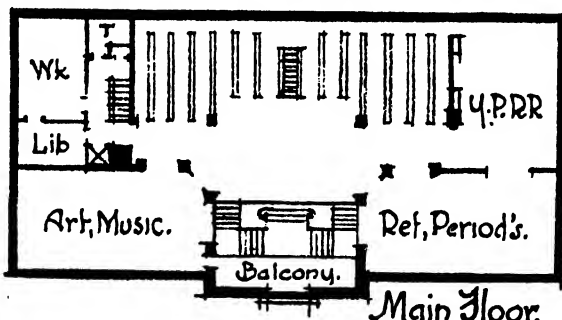
Section.



Mezzanine Plan.



Ground Floor



Main Floor.

Harmanus Bleecker Library (Albany Central Library), Albany, N.Y. Yuller and Robinson, Co. Architects. 1924. Pop. 120,000 Cost, 170,000.

libraries in Ch. 24; complete control from the reversed desk; clerestory lighting over it.

The entrances at Albany and Dearborn have been arranged to give nearly as much importance to ground floor as to main floor. The ground floor is slightly below grade; entrance straight in, descending a few steps; flights of stairs, right and left, to the main floor; a type of entrance confusing to a stranger, tortuous and rather noisy, requiring him to mount a stairway to reach the principal reading rooms.

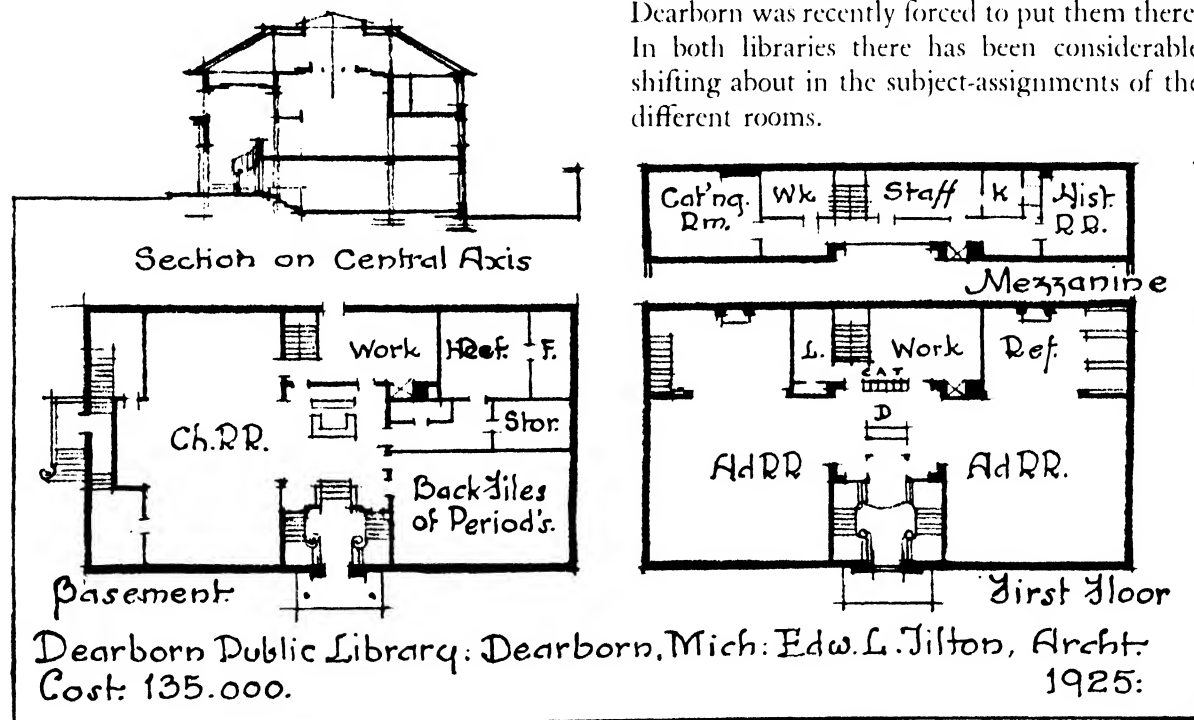
Dearborn in its recent rearrangement has divided the desk service, shifting all adult returns with their clerical staff and slipping to the ground floor, thus cleverly preserving the main floor for the greatest possible book use free of all avoidable confusion, keeping the adult book-stock together, and combining children's service and entrance with this adult return service in a single desk.

It is questionable whether an entrance part-way between floors is justified except under unusual grade conditions. It is obvious that a borrower, returning his book, goes down steps to do it; then to choose a new book must mount

the same steps on his way to the book-collection. In each of these libraries the lower floor is so near grade it might be considered the first floor, with the main adult library on the second. Compare Richmond, Va. (Ch. 31), where with similar levels stairs are outside; yet interior stairs are more logical since they are protected from the weather, *e.g.* Berkeley (Ch. 30) and Fort Worth (Ch. 31).

On the main floor Albany has the island desk and a large open stack in two levels; the work-rooms in a corner, like the Sexpartite plans of Ch. 24. Dearborn with workrooms behind desk is like the Sexpartite plans of Ch. 24 and the Quatrefoils of Ch. 26. In both libraries the various service rooms are well thought out and repay examination, the mezzanines invaluable.

Both at Albany and Dearborn the libraries are much too small for their communities though at Albany the State Library is only a block away and relieves the Bleeker of much elaborate reference material. Dearborn, built in a town of 10,000 persons, allowed for a growth to 25,000; now in 15 years there are 60,000. Albany planned for children in the lower story; Dearborn was recently forced to put them there. In both libraries there has been considerable shifting about in the subject-assignments of the different rooms.



SLOPING GROUND—CHILDREN BELOW: West Hartford and Winchester are on hillsides sloping away from the entrance road. Though the main floors are little above grade in the front, basement floors are level with the grade at the rear. Under such circumstances the children's rooms are naturally in the rear basement, for it is more in the nature of a ground floor, airy and bright, with no steps down at the doorway.

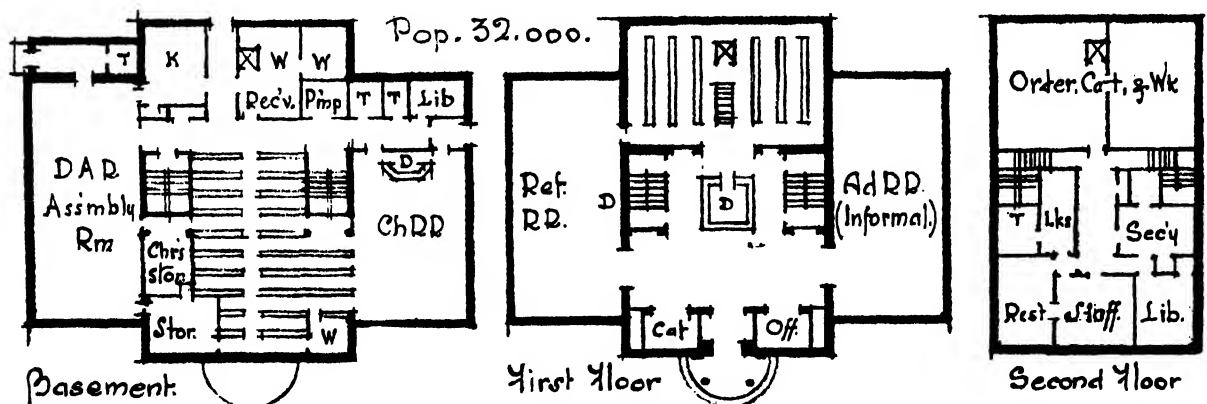
West Hartford is the old subdivided type of H or U plan (Ch. 25). Readers cannot see the desk nor be seen from it, so they are not disturbed by any confusion there; but one of the staff must be constantly in attendance in each reading room or else readers must be trusted to be on their good behavior, unfortunately impracticable in most communities. Compare Wakefield (Ch. 25). Readers' space seems small in proportion to total area; stairways (probably governed by an unreasonable law) bulky and awkwardly placed. Workrooms, staff-rooms and service rooms abnormally generous but unfortunately totally disconnected from desk and not on the same floor with it. Building is not planned to save steps nor to be administered at a low cost or by a small staff. Bookstock usurps valuable reader and staff space convenient to entrance. One wing of the basement is used by the D.A.R., a questionable precedent. The rest is entirely devoted to library service.

The Winchester Library is an L plan in composition, the rear wing partitioned off as an exhibition room. The special-subject alcoves are reminiscent of an attractive feature of older libraries. All facing toward the desk, reading room and alcoves are under a single "radial control" (Ch. 26). Stack and workrooms parallel the arrangement at Quincy or the Wilmington Branch at Los Angeles (Ch. 25). Excellent control; decidedly one of the interesting modern plans. Administration, compact and efficient; the difficult relation between stack, cataloging room, catalog and basement receiving-room well worked out. One large area for work and librarian might have been more convenient and economical.

The children's room in the rear wing is entered at the lower grade. Position of desk unusual, there being no attempt to control the entrance. A small workroom near desk.

Winchester is in part a community center. Exhibition room is planned to be used as a lecture room also, a projection booth over the entrance. Funds were sufficient for good finish. There are many well-thought-out details of arrangement and equipment, such as the reading room lighting (Ch. 38). Compared to total floor area, reading space seems small; but possibly in the future the exhibition gallery may become reading space; it would be in full view of desk if the intervening partition were removed, and

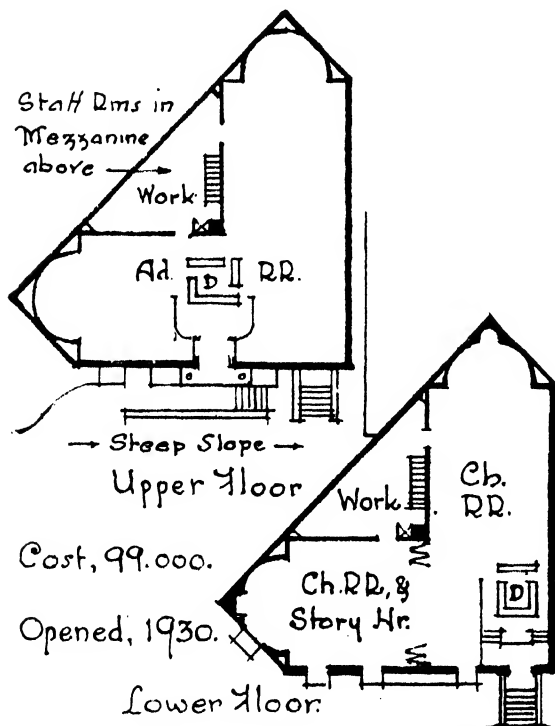
West Hartford Public Library: West Hartford, Conn: Cost, 153,000: Ebbets and Yrid, Archts: Mylchreest and Reynolds, Asso. Archts: 1938



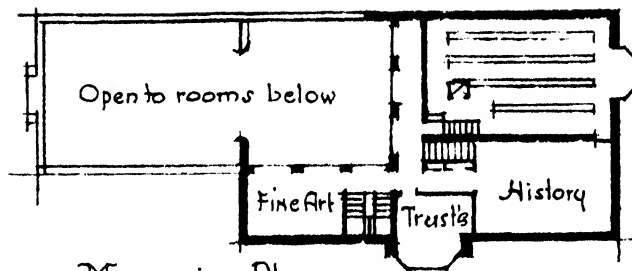
the plan would become the typical L-plan of Ch. 25. It seems unfortunate to send Fine Arts and History (whether local or general) to an upper floor and use part of the main floor for non-library purposes.

The site slopes sharply down toward the rear, so the development of an important basement is natural. There is much exterior wall, but that is characteristic of the L plans. The interior is varied in the height and form of its several parts, original in design and of great interest.

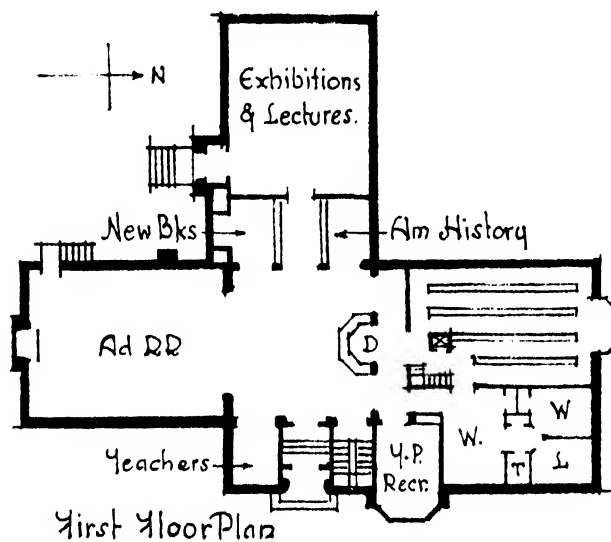
The Monroe Branch at Rochester turns to good account its small triangular plot on sloping ground abutting a canal. An ingenious solution; simple and economical; sufficient light and space; large proportionate reading area; few stairs to climb; rooms of pleasant form; ample work space; close control of entrance and exit; every reader under a natural supervision from the desk; all very desirable qualities in a city branch.



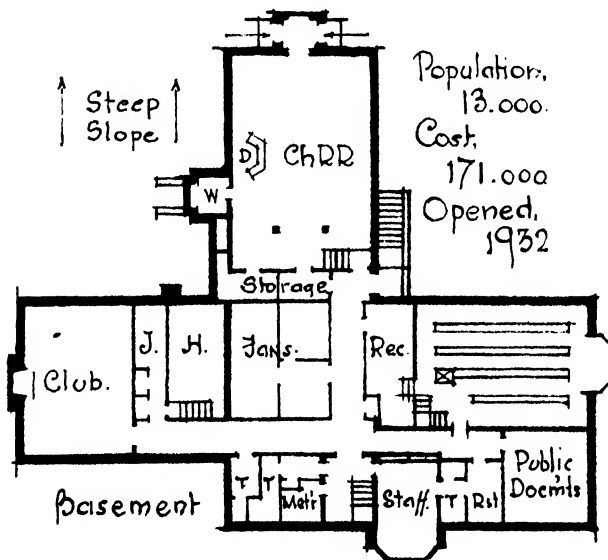
Monroe Branch: Rochester, N.Y.
Bohacket and Brue Architects:



Mezzanine Plan



First Floor Plan



Winchester Public Library: Winchester Mass.
Robt. Coit and Kilham. Hopkins & Greeley, Archts

CITY BRANCHES: CHILDREN ABOVE:

The second story has proved satisfactory for the children. They are young and strong; it is good exercise for them to climb the stairs and they do not mind it. They are not distracted by seeing other children at play outdoors. A second floor does not suggest dampness or possible inferiority, like a basement; rooms are lighter, windows larger; but the first floor tends to be rather lofty so there are more steps to go up than there would be to go down to a basement. In either case the stairway is difficult to supervise, and it must be separated from the open interior and particularly the reading rooms, for children are especially noisy on stairs.

Whether it is better to have children's entrance and adults' entrance entirely separate is a question. See Chs. 12 and 16. If they are combined, the administration has only one doorway to control and there is the psychological advantage of unity. The children seem on a parity with the adults, and as they grow older there is a natural transition to adult departments; they enter the familiar doorway and continue straight on instead of turning right or left to the stairs. Conversely, if separate, the children do not stray into the wrong places and have to be shooed away; the adults' entrance is not cluttered up with bicycles and roller skates, its grass and shrubbery not trampled and broken down. The skate and bicycle argument is not always sound, for the students or "young people," logically entering with the adults because they use the same reference material, are apt to be the worst offenders with skates and bicycles.

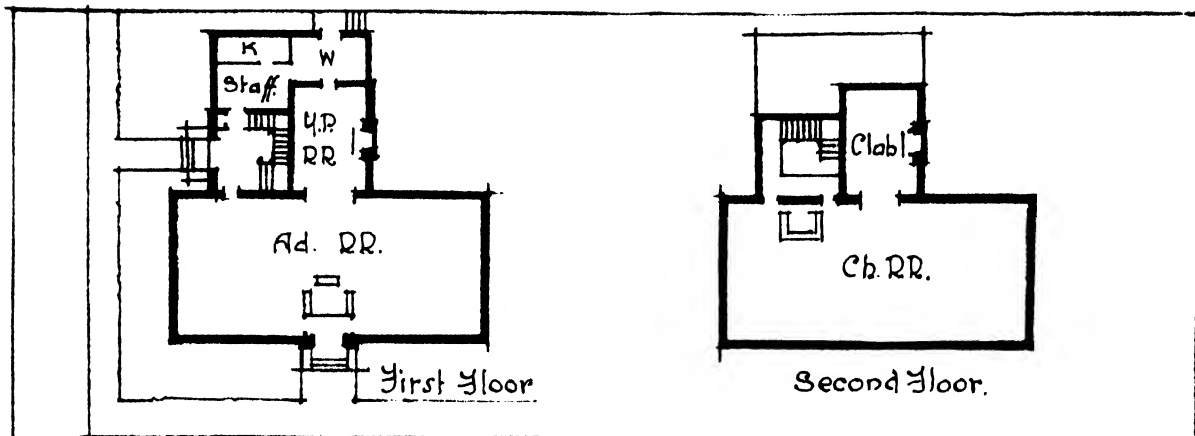
Monteith has chosen the combined entrance. Inner wall of the entrance hall and stairway is glazed, so supervised from the adult circulation desk. The plan has characteristics of both Trefoil and Quatrefoil. The general reading room to the left is lofty, extending through both stories; the rest of the first floor is low with children and staff rooms above. The variation in height and shape of rooms, the entrance off-axis, the projecting wing, all are welcome departures from rigid symmetry. Island desk in characteristic po-

sition; reading spaces separated from circulation space by solid walls with wide openings instead of the usual glazed screens; more effective in barring noise, and particularly in separating the quiet study and reference rooms from circulation, but interfering with supervision to some extent. The generous wall shelving is supplemented by a basement stack reached by a short stair directly behind the service desk, thus utilizing the basement area farthest from the windows. Stacks on the main floor behind the service desk would consume space that is here used rather strategically to take the magazine readers out of the other reading and reference rooms and give them close supervision. Except in large libraries, this transfer of the stack from the main floor to basement is not common practice because the stack is generally open to readers and a basement stack would be awkward for them and hard to supervise. Here it is principally for reference material which, in larger libraries, is brought by pages on call-slip requests.

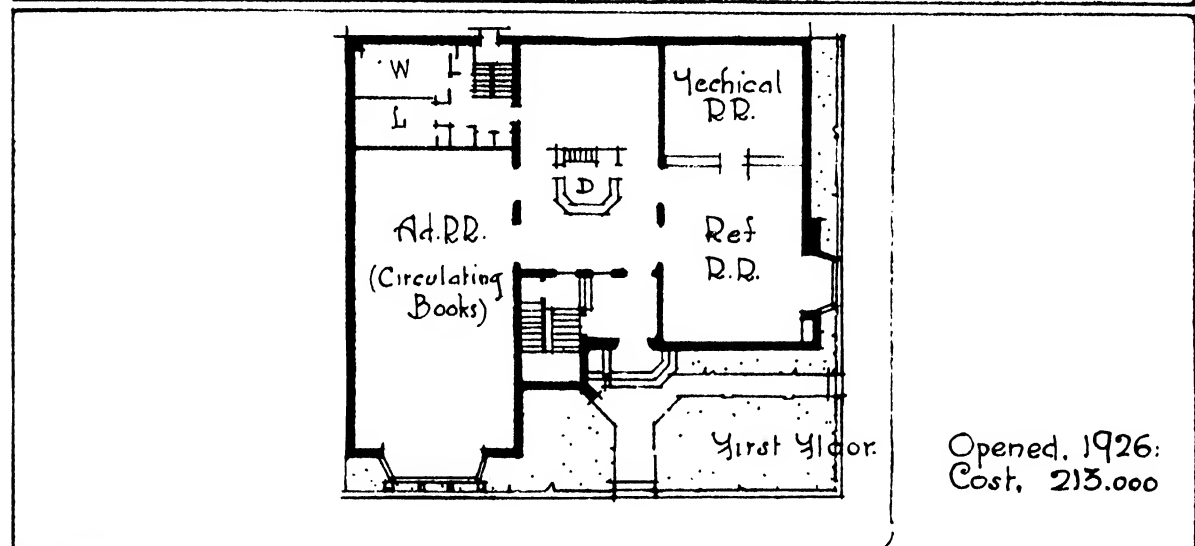
The children's room on the second story has the reversed desk with its close control. No space for a story-hour room; children go down to the basement and use the lecture room.

Runnymede, on a corner plot, separates adults' and children's entrances completely. First floor a reversed-desk Trefoil, but the typical flanking screens are absent. High school, or "young people's" room is properly grouped with adults, not with the children; work- and staff rooms together on the first story, whereas usually this space is all given to workrooms, the staff rooms on second or in a mezzanine. No workroom on the second. A direct and simple plan but workrooms are cut to the minimum and rather remote from desks. The fireplace seems properly in the club room, for it is the natural focus of a small gathering.

The matter of scant workroom space is a fault of many libraries. The amount of preparatory work that goes on "behind the scenes" is not generally appreciated nor taken into account in the preliminary plans, so finally only odd spaces are left for the important staff work.

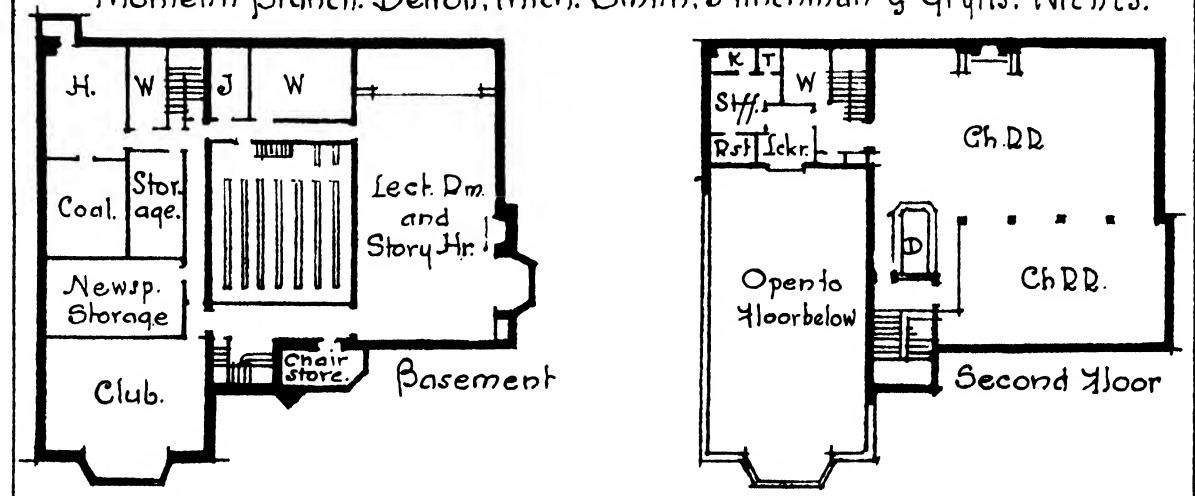


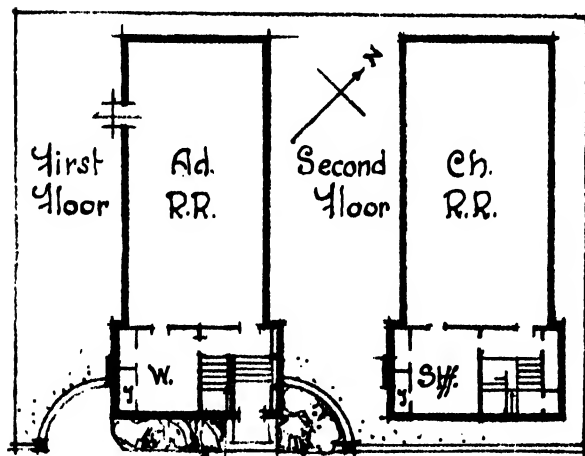
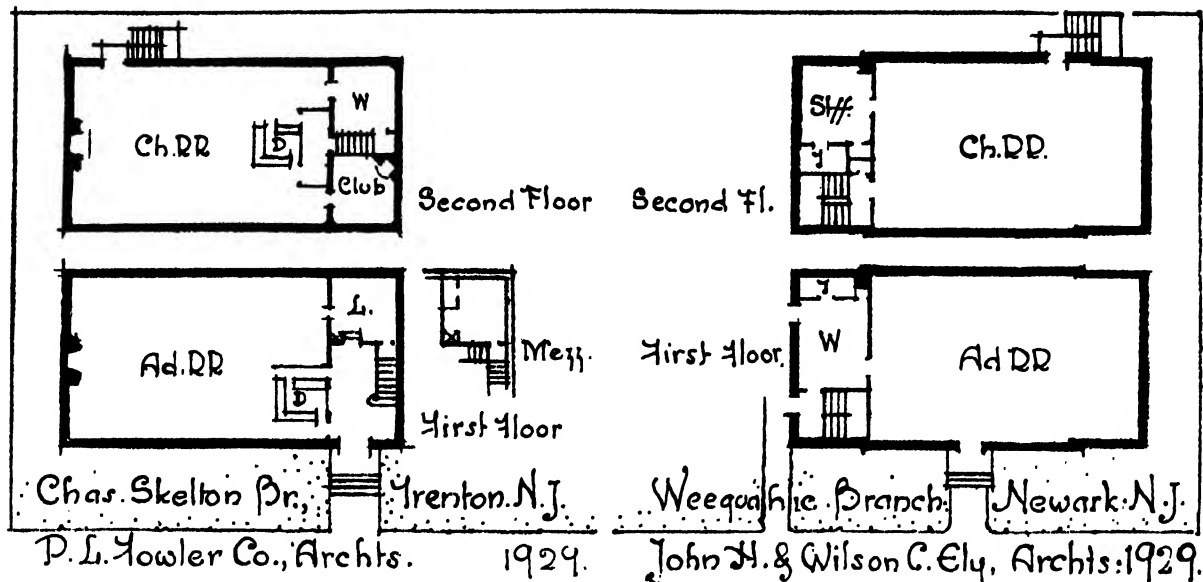
Dunnymede Branch: Toronto: Can: John M. Lyle, Archt: 1930: Cost, 43,500:



Opened, 1926:
Cost, 213,000

Monteith Branch: Detroit, Mich: Smith, Hinchman & Grylls: Archts.





Clinton Branch: Newark: N.J. 1925
Gilbert & Betelle, Archts: Cost: 58,000.

SMALL CITY BRANCHES: CHILDREN ABOVE: The New Jersey cities of Newark and Trenton have developed a compact type of small city branch with unusually large reading space in proportion to total area. Adults on main floor, children above; the entrance, workrooms, staff rooms and toilets concentrated at one end. Adults' entrance sometimes on the side, directly into the reading room; a workroom on the first floor, convenient for book delivery; staff rooms on the second. Usually a basement under the entire building, used for heating plant and stor-

age. Local laws require a fire-escape or secondary egress from the children's room since it is on the second story.

The Weequahic Branch is typical; Vailsburg and North End Branches, also at Newark, nearly duplicate it so are not shown here. All have spacious lawns either at the side or at the rear for insurance of light, air, quiet and space for future expansion.

The Clinton has the same plan, but to minimize street noises it is set end to the street near the northeast side of the plot, freeing the southwest side for lawn and garden. The site, a plateau well above street level. Entrance door near street level with inside stairs up to first floor.

The Skelton differs from type in having a lofty first story with sufficient height to put the staff room in a mezzanine. This releases the corner room on the second floor for the Children's Department to use. The stairs are compressed into the center of the end space, freeing the second floor area over the vestibule for a club and story-hour room, but "robbing Peter to pay Paul," since landing space at the head of the stairs must be borrowed from the end of the Children's Reading Room. The adult desk, backed against a glazed wall, supervises the entrance. Compare East Trenton Branch, p. 358.

CHAPTER 28: DESK CONTROLLING ENTRY: OTHER AREAS SEPARATELY CONTROLLED

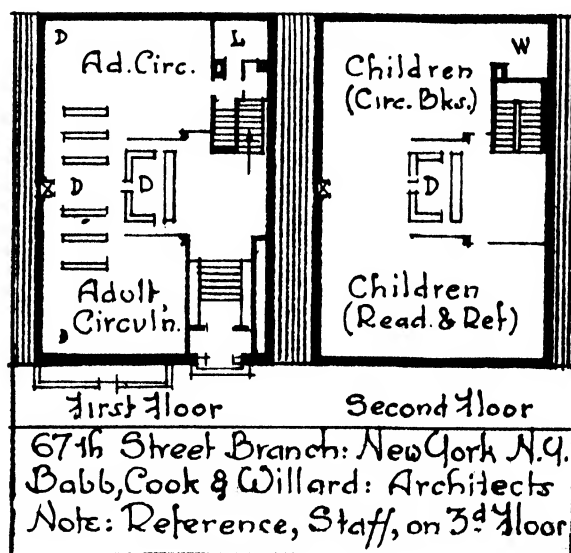
FOLLOWING THE OLD principle of library arrangement, that "public rooms should be planned for complete supervision by the fewest possible attendants," the small libraries in Chapters 23 to 26 combine all functions at a single desk: the control of entrance and exit, general supervision, assistance to readers and the three functions of registration, charging and return. When the children are segregated, as in most plans in Chapter 27, these functions are repeated at the children's desk. But in a larger library or branch the volume of each of the major services warrants the assignment of different staff members at different places in the building. The entire planning problem changes. There is greater freedom of arrangement. The stress is less on desk location and more on reading room and bookstack location, interrelation of these, and access to them.

Busy branch libraries in congested sections of large cities exemplify this. Land is expensive; no more of it than the building requires; a building on two or three floors with daylight from certain directions only; so the positions of reading rooms and other elements are dictated and the staff must be placed accordingly.

Before the first world war, New York City developed a type of branch library for the usual city plot hemmed in on both sides by other buildings, the only light at front and rear. The Sixty-Seventh Street Branch is typical. Adults' circulation, with the general book collection and a few reading tables on the first floor; children on the second; reference on the third; a janitor's living quarters on a partial fourth floor. The reference readers are largely high-school students, so the handicap to their work in splitting the adult bookstock and in the part-duplicate catalog is not as serious as it would be in a larger library, where reference work is by adults and covers the entire field of non-fiction literature.

In these inner-lot plans the readers are placed front and rear, next the windows, generally with a member of the staff stationed there; entrance hall and stairway at one side, open in the older plans, partitioned off in later plans, leading to a large open space in front of the square circulation desks which are in the center of the building on both first and second floors. There is close control. Turnstiles are disregarded, but barriers along the desks retained. In one of the later branches the 26-inch alleys at the adult desk proved too wide, so a brass rail was installed that cut the space to 14 inches, and glazed screens built over the low flanking bookshelves, high enough to prevent passing out an uncharged book. These, the installation of another center of control and the rearrangement of one end of the adult room have cut an annual book loss at the branch from 2000 volumes a year to 500. Supervision and control are vital in the branches near the city high schools and colleges. They create a governing element in the plan.

Social conditions vary widely and the extent of control requires special study in each case.



LARGE CITY BRANCHES: NARROW PLOTS: At Fordham the plot extends from one street to another and is wide enough for a narrow yard on each side. The streets are on different levels. On the upper street to the west is the main entrance, leading straight up a flight of steps to the adults' circulation department on the first floor and up a parallel stairway to the children's department on the second. There is another entrance on the lower street, to the former auditorium, now converted into a special reference room. The stairway here is the second of the two possible exits "remote from each other" required by the city code. The two stairways and the conversion of auditorium into reading room have complicated the administration. The latter change has happened in so many libraries that we suggest its possibility be considered when a building is planned, and each auditorium designed for future reading service.

When the building was extended one bay to the east and the reference library developed, it was decided to keep its organization separate from the circulating library. Consequently there are three sub-organizations on the three floors.

It seemed unreasonable to force anyone approaching from the lower street to walk completely around the block to reach the circulating library, so a second desk and control (B) was developed in the circulating library. There are thus four desks (A, B, C, and D) each controlling a library entrance. Books from the reference library do not circulate. The other three are circulation desks. A fifth desk (E) controls the entrance to the "closed shelf" room, whose books are charged and returned at the circulation desk (B) near by. This sounds complicated, but it works out rather well. It is a very busy library with an enormous student clientele. The extensive desk service seems necessary. The greatest potential difficulty is the control of the rear exit from the children's room. The stairs are constantly used by the staff so a warning signal is not applicable.

The recent Woodlawn Branch at Chicago has much the same problems in a narrower space. There are not the two important street frontages but there are the narrow alleys or open spaces each side. Readers are put at the ends because of better light. Two doors and stairways on the street; the south next the return desk is the entrance to adult library and to basement assembly hall; the north, next the charging desk, is the exit from adult library and the entrance to the children's department on the second floor. The adult desks supervise the circulation lobby, its few tables and adjacent bookstack. There is independent supervision of the reading and reference room. The stairway at the side is the emergency exit, its doorway also the shipping entrance.

The first floor layout resembles in theory the Bridgeport and Mt. Vernon libraries (Chs. 30 and 34) in that the entrance to reading and reference rooms is through or past the open stack, perhaps a natural sequence. This separates readers from the constant movement about the circulation desk. The staff member on duty as reference librarian or readers' assistant would naturally supervise the room.

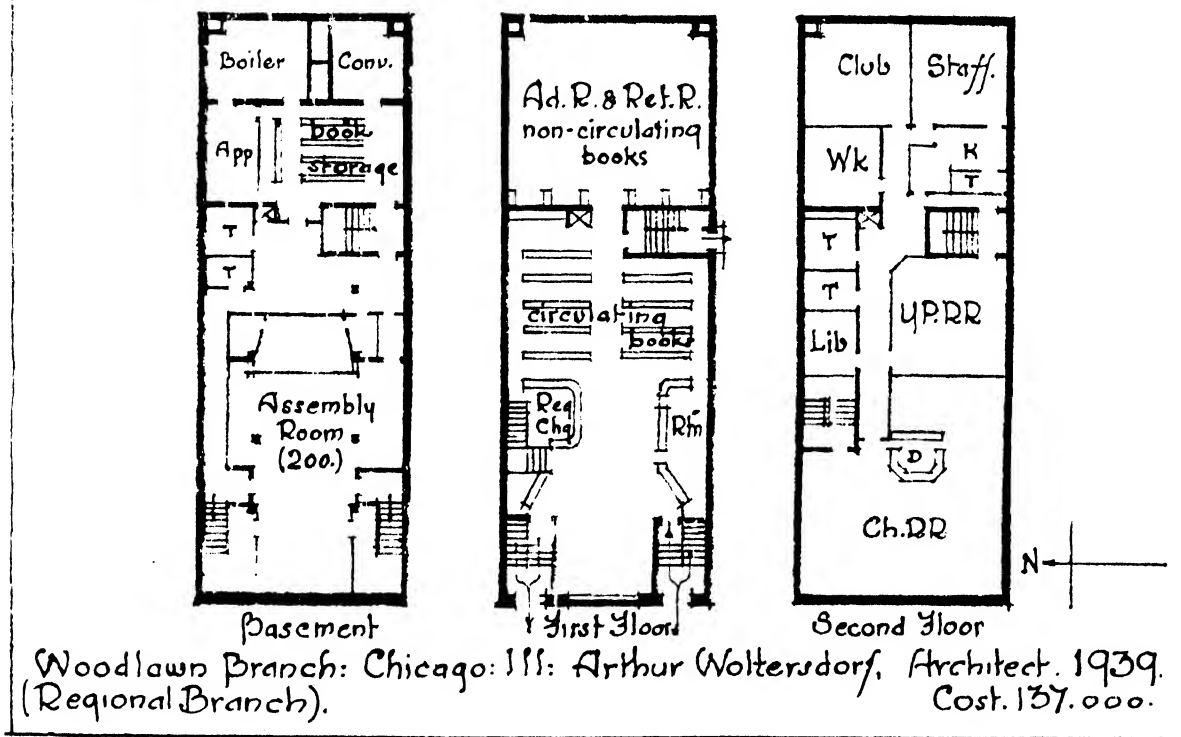
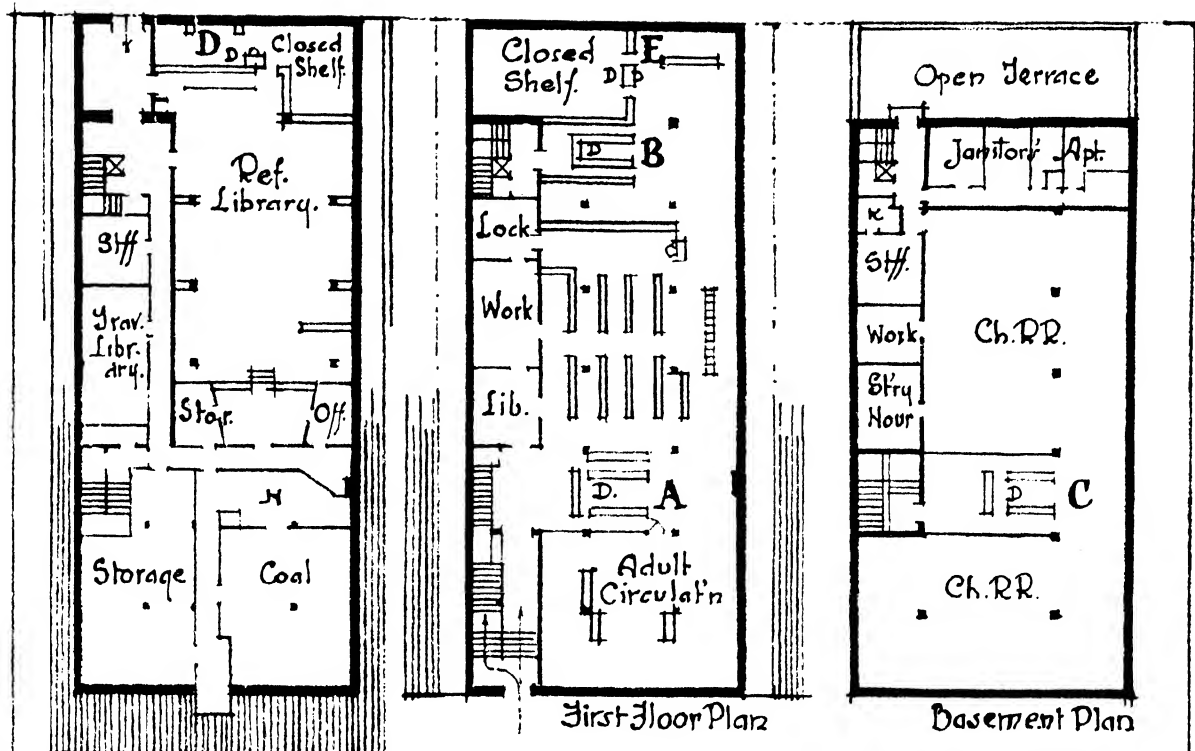
The first floor is all for the public; the second includes administration and staff quarters as well as children. Placing the "young people" here separates them from the reference collection so they require a second collection of their own. This by no means answers their need and necessitates constant purchases of duplicate adult books.

The assembly hall in the basement seats 200; the two front stairs and doorways are ingeniously connected with it to serve as its two required exits. But the questionable introduction of this assembly hall has complicated the front and consumed valuable main floor space by requiring the second stair and hallways.

The plan has obvious weaknesses. Reader space is badly inadequate.

The needs of a city branch are complex!

NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.



MORE LARGE CITY BRANCHES. Hunts Point Branch in New York City is in a closely built section but on an ample corner plot so there is light at front, end, and rear. The two reading rooms occupy the longer front from end to end, stairs and offices extend along the rear, a simple and economical plan. More light permeates to the new rear ell than would be supposed.

Adults' reading room on first floor is the familiar Right-Left plan, but with reading or reference space to one side and open-shelf room to the other. Most of the area in the open-shelf room is occupied by widely spaced stacks, with space enough by the windows for a casual glancing through the books. With this arrangement the serious readers on the reference side are undisturbed by the constant movement of those on the other side, looking for reading matter, taking it to the tables and glancing through it. In several instances we have questioned the effectiveness of attempts to give casual readers and reference readers different places in small libraries, but with the bookstack placed as it is here, the distinction is natural. Most of the reference readers are high-school students. Much of the reference material is at the rear, issued by the reference librarian on call. A small reference catalog is on the long counter.

The children's room above also divides into Reading and Circulation, but with corner entrance. The ample space in front of the desk is characteristic of all New York City branches, to provide for the periodic crowding in of the children after school classes. Even so, the stairway is filled at times with a crowd waiting to pass the desk.

The new ell is developed as a story-hour room. Used also for various community meetings, and approached by the new stairway in the rear.

Wakefield Branch is the latest of the New York series. In a less densely built section, it spreads out on a single floor but retains the separation of children and adults, each with its own desk. A common entrance lobby, the two desks to right and left, differing from the H- or

U-plans of Ch. 25, for those have a single desk in the entrance lobby. Both wings have reference sections at the rear, the adults' with a staff member in charge. Catalog in only space that happens to be available, on the outside wall; not very convenient either to desk or reference section. Workrooms efficiently grouped and near both desks.

Exhibit cases opposite entrance, a characteristically modern vista-closer. Stairs around them down to a small theatre-auditorium and a young people's recreational reading room, open only at certain times. A staff member in attendance, but any suggestion of formality is avoided.

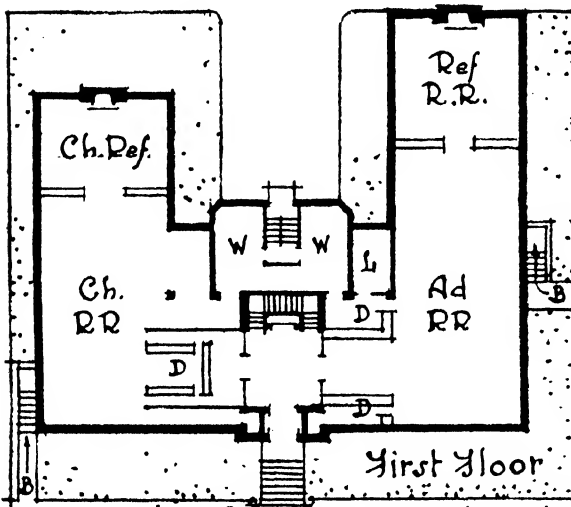
The problem quite different from Hunts Point or Fordham. No great press of students; not such high nervous tension; more the situation of an average branch in an average community.

West Side Branch at Grand Rapids divides its desk-service. Return and registration are at the central desk; but each reading room has a small desk for control and charging near its end doorway, the Cleveland system adapted to a small organization (See Ch. 31). Building planned for many readers in proportion to circulation. Basement stack under the entire front rectangle, serving in part to relieve the Central Library of little-used material. Stack structure not used to support the floor above as in many Open Plans (Ch. 32); it is counter to building law in many cities. Not a Regional Branch, so work space is small. One end of the second floor front was unassigned when building was planned and used since for various purposes; the other end an auditorium; hence the two important public stairways.

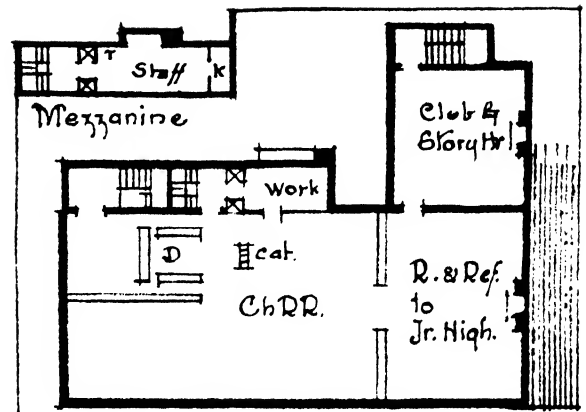
Interesting details are the placing of first floor at street level with entire omission of entrance steps, the placing of the front directly on the sidewalk line, the large windows all arranged for displays, their sills low and the displays not high, so a passerby glimpses activities within. "In these respects it is like a modern store, and for the same reasons—to attract the interest of the passerby on the street, with the suggestion

that what the library has to offer inside is worth while for him and that it is of easy access. . . . The display windows have a total of 60 linear feet on the street—a business street and a main thoroughfare.”

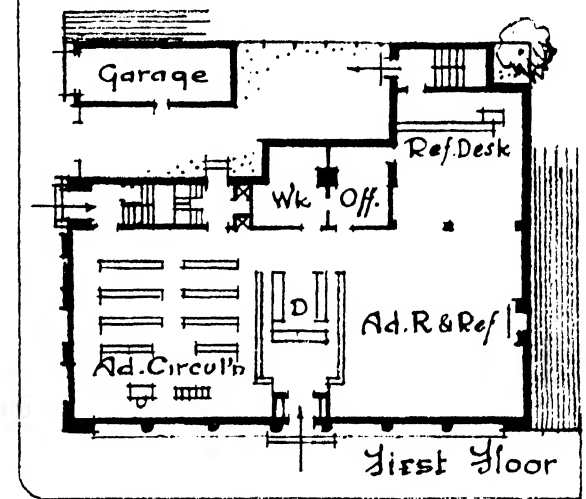
There were earlier expressions of these ideas; but it was in the West Side Branch at Grand Rapids that these particular details were tried out and found good, to be adopted and developed on a larger scale in the Enoch Pratt Free Library at Baltimore (Chs. 21, 32).



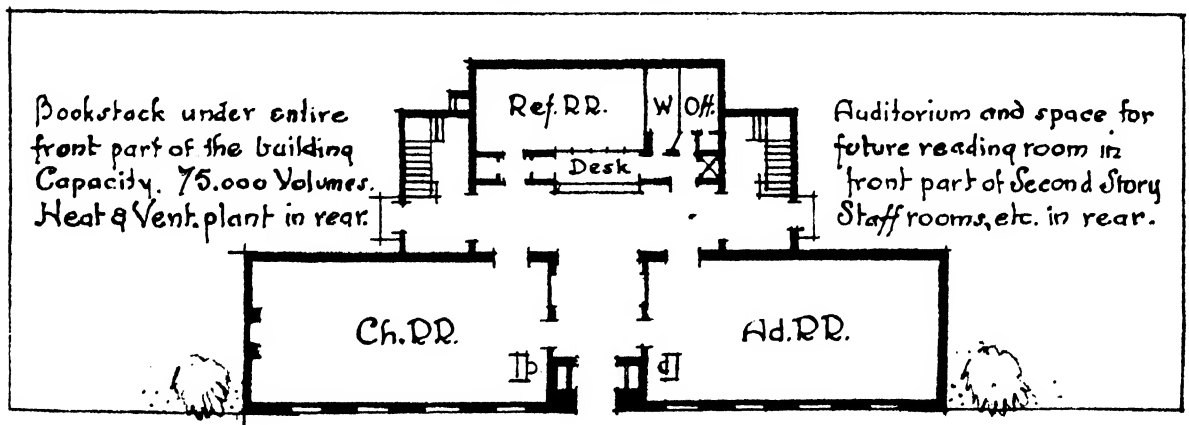
Wakefield Branch, New York, N.Y.
Thomas Dunn, Architect. 1938.



Second Floor.

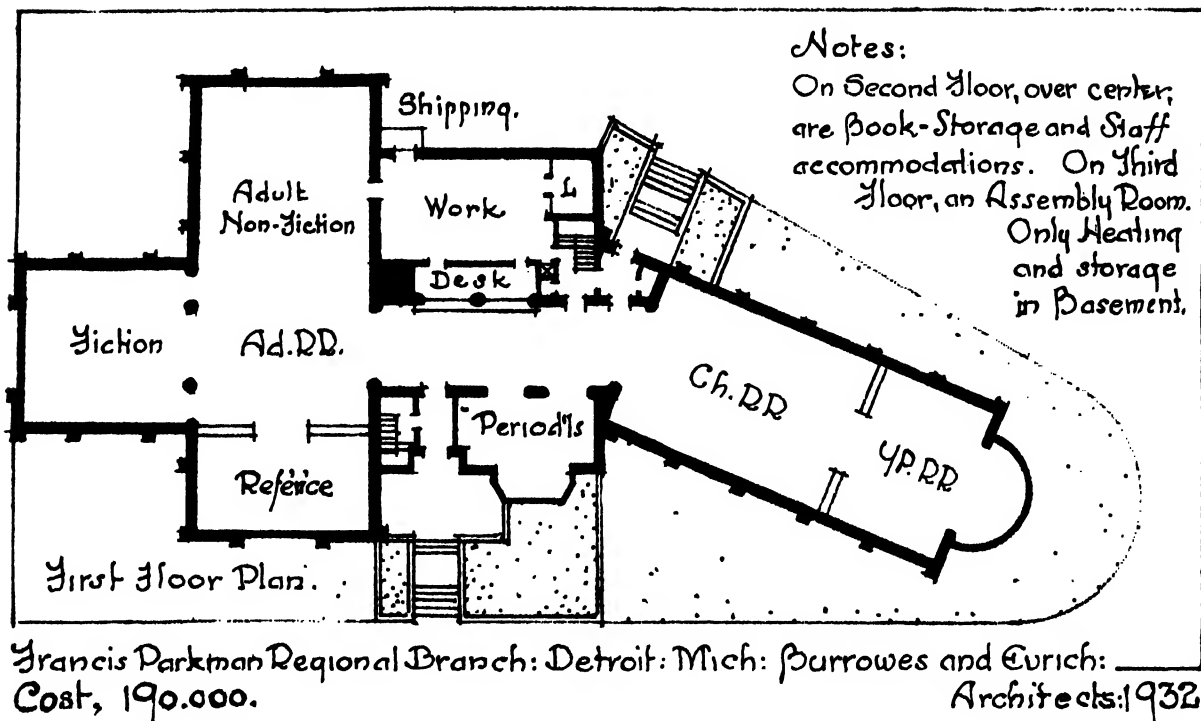


Hunt's Point Branch, New York, N.Y.
Carrère and Hastings, Archts. 1929.



West Side Branch, Grand Rapids, Mich.
Robinson and Campbell, Architects. 1926:

First Floor Plan.
Cost, ca. 200,000.



COMPACT ENTRANCE: DESK AND WORKROOM: At the Parkman Regional Branch and the recent Mark Twain Branch, the desk and workroom are connected and there is a comparatively narrow entrance lobby. There are large crowds at both branches necessitating a large staff. The circulation desk does not attempt to supervise any of the reading rooms. This is done by members of the staff in the rooms themselves or at desks near their entrances. Quoting a letter from the Detroit Library referring to the Parkman Branch:¹

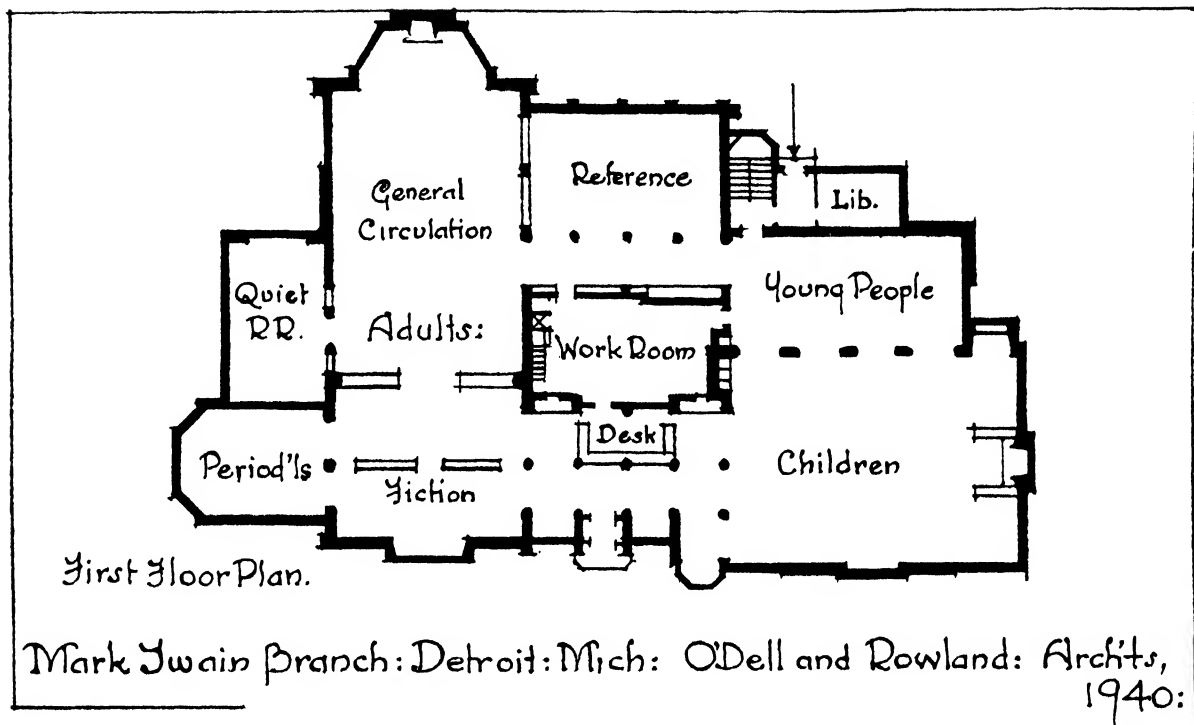
"By having the workroom directly behind the receiving desk we keep out of sight all slipping of books and other routine processing which does not directly concern the public. All routine work, as charging, receiving, and registration work, is concentrated in the lobby, thus leaving the book rooms for book display and reading purposes only. Further, the lobby forms a good barrier between the adult and juvenile crowds so the noise of one will not disturb the other.

"During the quiet hours of the day receiving, registration, and charging will all be handled at the receiving archway directly in front of the

main entrance. During busy hours the work can be quickly and easily separated. Receiving is then done at the archway directly in front of the main entrance, registration work at the adjoining arch, and charging work at a small table placed on the floor of the lobby directly to the left of the main entrance. We now feel that the work of the larger branch libraries has grown to a point where these routine processes should be separated during busy periods."

The theory of the Parkman plan is developed further in the Mark Twain Branch; both worked out with originality and success. The weakness of the Parkman in placing the young student group so far from the reference material in the adult rooms and far from the desk is overcome in the Mark Twain by bending the right wing around, as it were, behind the workroom, until its tip touches the adult non-fiction room. Thus there is a circle of reading rooms around the workroom as a center, a Concentric Plan quite different from the Radial Plans of Ch. 26, for

¹ From Ralph A. Ulveling. See also his "Staff workrooms and working space, their location and arrangement," in *Lib. Jour.* Aug. 1934, and discussion in Ch. 18.



neither desk nor workroom attempts to supervise the reading rooms, though the desk has a partial view of two of them.

We quote another letter: "In most of our branch library work a major part of the reference call is made up of requests of high-school and even young college students. Hence in the Mark Twain Branch we have, by placing the workroom in the center, made this room easily accessible to all public-service rooms and at the same time have maintained a continuous service line for the child and adolescent. After coming in the main entrance and turning right you reach the children's room, with a small picture-book alcove nearly surrounded by low shelving, thus keeping those unsightly large books where they do not upset the appearance of the children's room too much. Then passing from the children's room you go into the intermediate room and from that to the reference room which, in effect, becomes the bridge between the children's service and the adult service. The adult non-fiction room immediately adjoins the reference room so that the books most likely to be used in reference work will be easily avail-

able. With this sort of arrangement we believe the staffs of the adult and juvenile service will be able to work together in such a way as to make the transition from children's to adult service relatively easy."

The letter draws attention to the small "quiet" room to the left with no bookshelving, outside the route of persons selecting books, a place "where adults can go . . . when they have selected their books and wish to read. . . . We have tried by means of setting up high-school rooms to keep the student group from annoying adults but have finally concluded that perhaps the best thing to do, since we cannot confine students to the high-school room, is to set up an adult room in which only fully matured adults may go." See Ch. 14 for illustration.

The specialization characteristic of these Detroit branches, and of the Washington branches described next, is most efficient in service; but naturally the personnel is large and running costs correspondingly high.

The contrast in size with the branches in other cities, Boston for instance (Ch. 26), is surprising.

TWO ENTRANCES: CHILDREN ON SECOND FLOOR: Washington's theory of branch-arrangement compared with Detroit's shows certain similarities and differences.

Similarities are:

1. Fairly large buildings rather than a greater number of smaller. Therefore each can "have a larger and more varied staff"—thus do "high-grade intensive work whereas in a small branch where the staff is small and no opportunity for diversification the branch work consists largely of a more or less hurried effort to get out the maximum number of books to people with little opportunity for personal service, either to adults or children."²
2. Choice of sites where light is available on all sides.
3. Circulation desks that confine their work to issue and return of books, registration, control of entrance and possibly of a small open stack; placed therefore in an entrance lobby, protecting readers from the inevitable confusion of movement around a circulation desk. Requires a staff member in each reading room, even at slack times, if supervision is desired. (This disposition, universal in large libraries, unusual in smaller, may make the catalog difficult to place, since it should be readily accessible to desk, to reference readers, etc.)
4. Careful attention to workrooms and administrative facilities.
5. Main floor near grade; no public rooms in basement except toilet rooms.
6. Large personnel and higher salary expense for service than in buildings more simply laid out with fewer rooms.

Differences, characteristic of the Washington branches, are:

1. Two stories instead of one, children given the second story. (Note, however, that the older Monteith Br. at Detroit places children on second floor.)
2. Stairway of consequent importance, used by the children; a separate entrance to it in Georgetown, supervised from the reference librarian's desk; entered from the general vestibule in Pet-

worth, supervised from the adults' circulation desk (*cf.* Monteith, *et al.*).

3. Square desks similar to Island type, enclosing work space, in contrast to the recent Detroit desks which are backed up by a workroom; desks in excellent light.

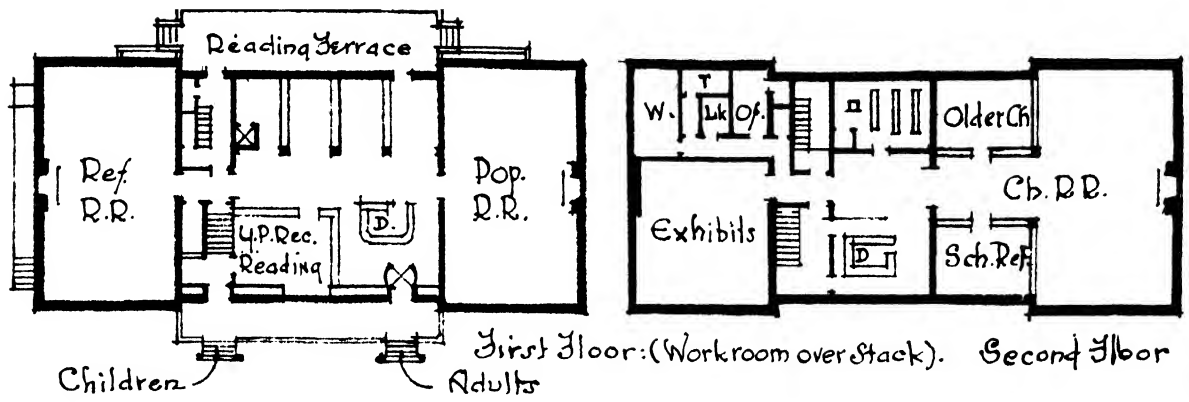
4. A small open stack in the circulation lobby for the most-used non-fiction books.

5. Plans much more sub-divided; smaller units; control therefore not so simple (*cf.* Amherst). Stairs and elevator project into the floor-area, partially separating reference wing; all activities carefully located, but divisions preclude much reallocation of space in future; opposed to the Open Plan or Flexible Plan theory.

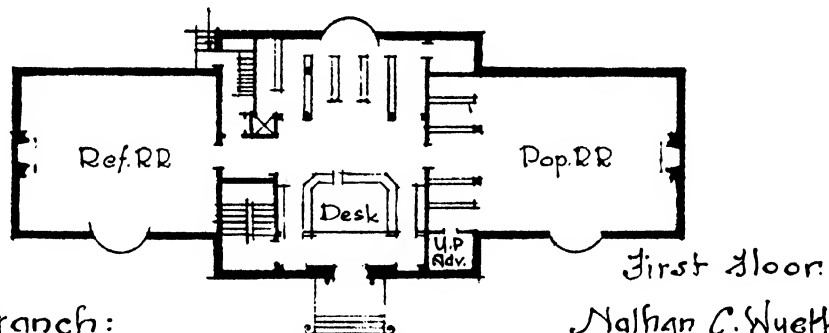
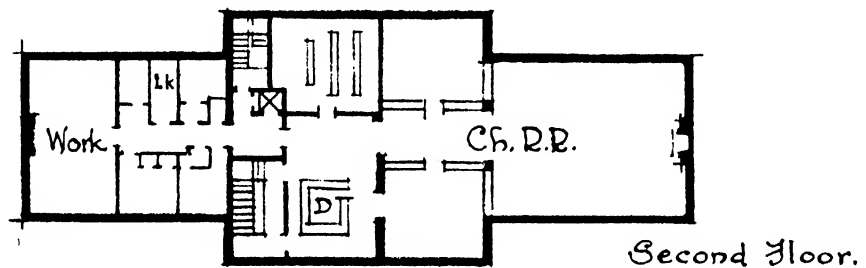
Georgetown assigns a space in the circulation lobby to senior high-school students as their introduction into the adult department. It contains a few familiar juvenile books as stepping stones, many attractive editions of adult books, and one or two books of outstanding merit on each of a great variety of subjects intended to lead to the wealth of the whole library. It is primarily for recreational reading and the development of individual interests rather than for compulsory school work. "Children through junior-high age use the second floor collection; but as they grow older and need adult books are given a card of introduction to the readers' adviser on the first floor. High-school reference is done in the circulating and reference rooms downstairs."

This young people's recreational reading alcove is not repeated in the recent Petworth Branch, nor is the reading terrace. The very useful mezzanine over the stacks at the rear of the lobby is retained, with work space midway between the first and second floors. Opposite the circulation desk is the reader's adviser, the catalog behind her against the stack-ends. Here are the popular magazines and much of the non-fiction; other non-fiction and reference material in the reference room; fiction, "literature," and biography in the general reading room. Children's material distributed in wall cases and around the alcoves, according to age-groups.

²Letter from Dr. George F. Bowerman.

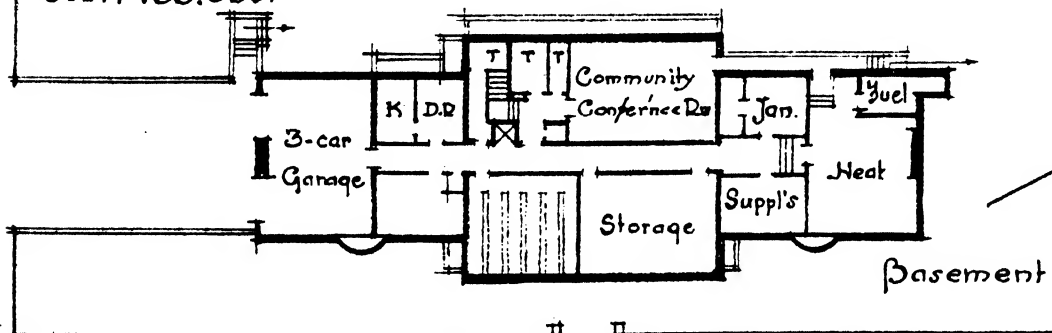


Georgetown Branch: Washington: D. C. Nathan G. Wyeth. Mun. Arch.
Cost. 150,000. 1935:



Petworth Branch:
Washington: D. C.
Cost. 180,000.

Nathan C. Wyeth:
Municipal Architect.
1939:



DOMESTIC CHARACTER: COMMUNITY CONTROL: The Jones Library at Amherst is a memorial with a generous endowment, a library and community center combined, a "Communal Hearth," someone called it. In architectural character it is a stately New England house of the Colonial period given over to library use. One room opens from another pleasantly, with a glimpse of handsome chairs and tables of varied design, grouped irregularly, of polished floors and Eastern rugs. There is the characteristic central hall and elaborate staircase. An air of gentle living, of space and leisure, pervades it. No attempt to get in the maximum number of books or readers. Appearance of supervision carefully avoided. The domestic character, requiring sub-division by permanent partitions into many small rooms, precludes future rearrangement or control by a minimum staff. See illustrations on pp. 16 and 114.

One freely enters the library without a sense of being under observation; but the main desk is not far off, in the corner of the larger reading and reference room near the door, so there is more actual control than there seems to be. Glass doors or wide openings between the rooms facilitate supervision. The Boltwood Room containing the more precious books can only be entered through the librarian's room. On the second story there is a painting gallery, a special collection of 500 volumes and two small rooms destined for committees or special book collections. On the third are several rooms for group and individual study. None of these are under direct supervision, but only known patrons are permitted upstairs.

The building divides in three sections, the adult library with community rooms above in the main building; the children's library in the west wing; the auditorium in the east. The irregularities of these wings and of the bay windows, lean-tos, and projecting gables are important in avoiding the formality and high serenity of fine monumental architecture, a step nearer the informality and homeliness sought here.

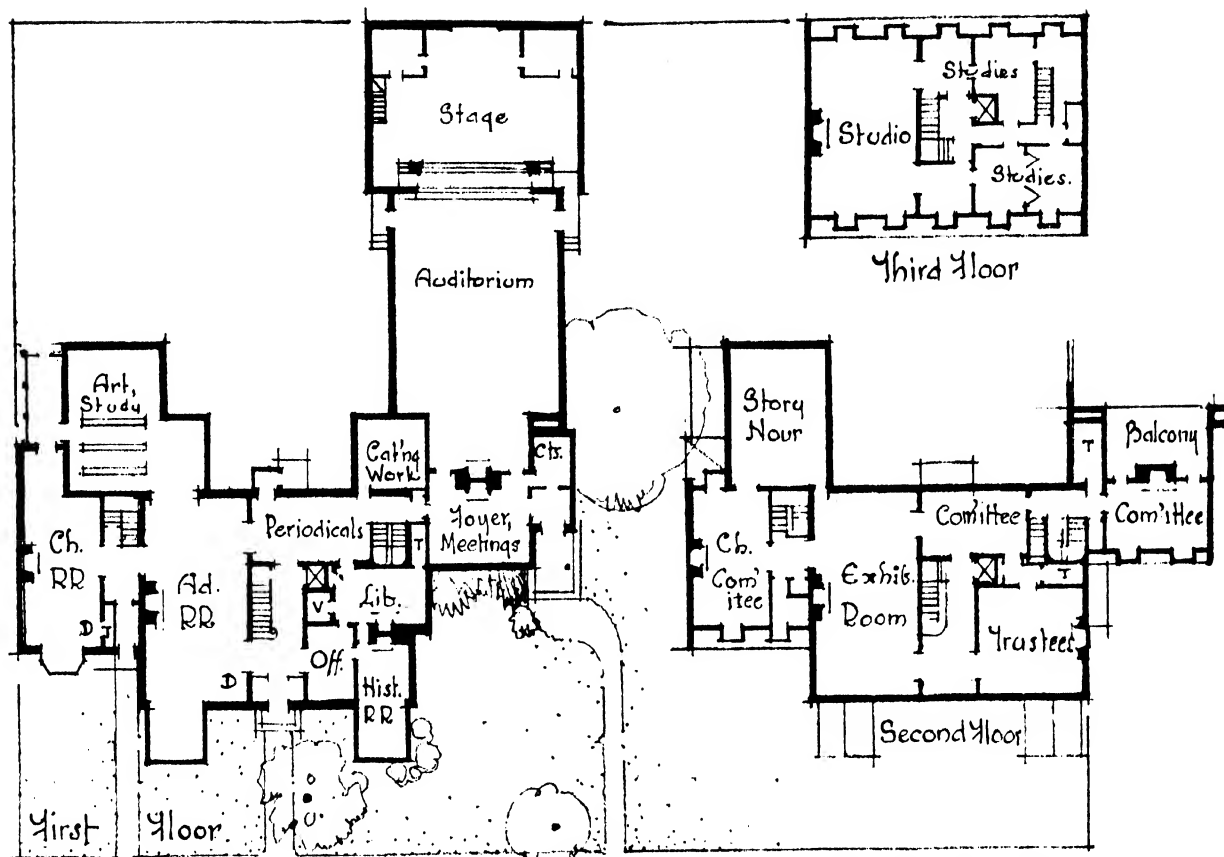
The children's library on the first floor has

its own entrance and desk. The basement is used for heating plant and dead storage, though there is space for a closed stack of thirty thousand volumes under the main reading room and facilities for storing school collections and other books under the children's room.

An analysis of the plan must take three theories into account; first, that a town library building is the natural community center; second, that it should have a domestic rather than a public or a formal character if readers are to be attracted and put at their ease; and third, that the public can be trusted to respect beautiful and delicate things, that the better their surroundings, the better their behavior and therefore the less need for complete oversight.

The theories seem vindicated in this particular case. Funds have been sufficient for both library and other community service. There has been no wanton damage. Amherst is a representative New England town of the better sort; the college students and the public of all classes use the library. A different group of people might take advantage of this confidence and react differently. The community services with the small meeting rooms and the large auditorium have not occasioned the annoyance deplored in other libraries. As one of the trustees expressed it, "We need a center where we can get together for the improvement and progress of the town. . . . If this is provincialism, it is a progressive, dynamic provincialism in which we may well glory."

This building is widely known and much admired. It seems to upset principles of control generally accepted as fundamental. If complete supervision from the fewest possible points is not a desideratum, the architects' plan-problem is quite changed and much simplified. If we accept this conclusion and apply it generally it spells disaster. One is tempted to classify all library buildings by the character of their communities, to divide them at once into two groups, those where supervision and close control are essential and those where the public can be trusted. But this is a dangerous venture! How can communities be judged? Can we assume for instance that



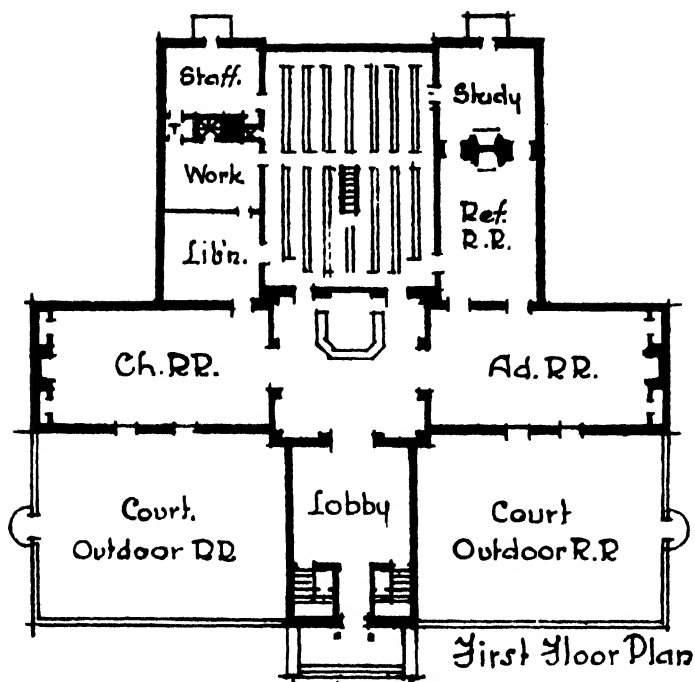
Jones Library: Amherst. Mass. Putnam & Cox: Architects. 1928
Population. 6,000. Cost, 300,000.

libraries and branches in all cities and in all factory-towns belong to the first class, and all libraries in other towns and villages belong to the second? It seems fantastic. If it is true there are many misfits among even recent library buildings! We have insufficient data to prove or disapprove this, and no one yet seems to have offered it as a theory; certainly we do not.

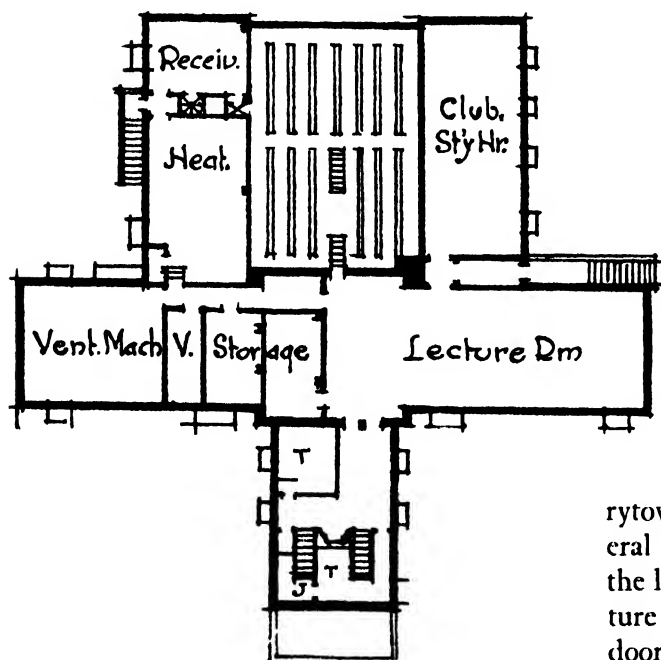
The Jones Library is needed as a delightful example from which various elements may be taken and adopted elsewhere. And we need more library foundations like it, where build-

ing and maintenance costs are ample and yet do not encroach on an adequate annual budget for the library work itself. The library as a community cultural center is an idea with great appeal and the future may bring widespread realization of the value of these combined functions in one building. But since the budget of the typical library is barely adequate to provide books and competent reference service, it is the duty of library officials to foster and protect these primary objectives and not be tempted into by-paths.

NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; 33-35; 36-39; 39-date. These index volumes are available in most libraries.



Lake Forest Public Library
Lake Forest, Illinois. 1931.
Edwin H. Clark Inc., Archts.
Pop., 7,000. Cost, 265,000.



Basement Plan:

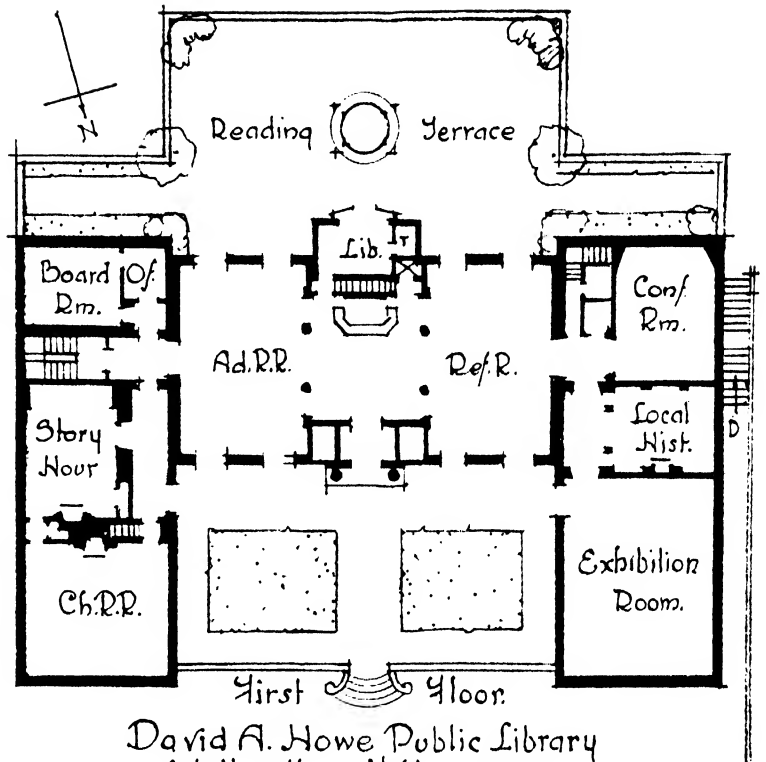
PUBLIC CHARACTER: COMMUNITY CONTROL: Lake Forest and Wellsville also are far from being models for the normal public library. Like Amherst, both are community centers as well as libraries, memorial buildings through generous gift funds, but unlike Amherst both are spacious, large in scale, designed "in the grand manner"; both are formal, serious and scholarly examples of architecture according to classic tradition, though very different in their interpretation of it. Carefully planned; but beauty of form dominates functional efficiency. They are far removed from the straining for the least cost-per-volume-housed or reader-seated, or for complete control by the smallest staff. In Lake Forest neither of the three reading rooms, nor the two reading courts, nor the stack, are under supervision from the desk, nor could they be supervised from less than four centers. As at Amherst, the public are trusted to be on their good behavior and the citizens must be of the sort who can be trusted or calamity will follow. The furniture carries out the spirit of the architecture; abuse of it is not expected. The character is that of a rather sumptuous and leisurely club. There is no attempt to bring the library to the people; they must come to it. One is tempted to consider such libraries as in a group by themselves, measured by standards other than those commonly applied to a public library. Palos Verdes and North Tarrytown (Ch. 24), Wakefield (Ch. 25), and several others might be included. At Lake Forest, the lobby serves as entrance to the basement lecture room as well as to the library. The great door to the desk room may be closed when lectures, receptions or other functions take place

after hours. Entrance to the two reading courts is solely from the reading rooms. There is provision for a large book-collection, arranged so readers can be admitted to it.

Whereas Lake Forest is on a flat terrain, Wellsville is at the edge of the Alleghenies. The reading terrace at the rear overlooks a great sweep of the Genesee Valley, an unmatched outdoor reading room. The supervision of this terrace, the two inside reading spaces, and the main entrance are cleverly achieved by grouping librarian's office, workroom over it, and circulation desk in the center, a radial control. Other rooms are outside this control. The bookstack is directly beneath the main floor, an excellent arrangement when the stack is not open to the public. Compare the libraries of Ch. 32.

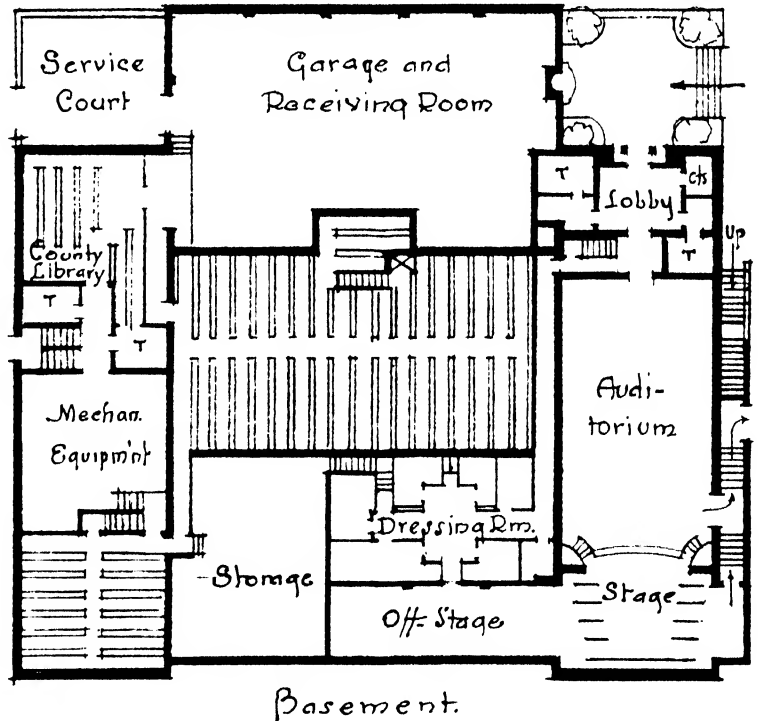
As at Amherst, the auditorium has a complete stage with provision for scenery, a series of dressing rooms for the actors, and cloakrooms for the audience. It is entirely separate from the library portion, two entities under the same roof. Entrance takes advantage of a slope in the ground. There is an unusually large garage under the terrace, with shipping facilities for the county service whose workrooms adjoin. Such an assemblage requires ample financing both in first cost and maintenance, and is a dangerous temptation in public library design; in no wise a solution of the normal library problem.

Fortunately, occasional gifts of notable generosity make such endowed community buildings possible. With their many activities, they stimulate a rich, varied, constructive, neighborhood program of great social value.



David A. Howe Public Library
Wellsville: N.Y. 1937.

Carl C. Ade, Architect: Ben M. Ade, Associate
Cost, circa 400,000



CHAPTER 29: THE LARGE CITY LIBRARIES: LOW: WIDELY EXTENDED: CROSS DRAFTS

THE CENTRAL LIBRARIES of Houston, Austin, Mason City and Pasadena are spread out horizontally, keeping major public library services on one level. At Mason City they are on the main floor at ground level, the auditorium above; at Austin the main floor is well above grade with auditorium and an exhibition hall in basement; at Pasadena, all including auditorium, on the main floor at ground level; but Houston, following old tradition, selects the second as the principal floor, assigns it to adults, and puts all detachable services on the first floor.

The extended type is attractive in its generous expanse of rooms, usually with high ceilings and fine ventilation in climates where cross currents of air are welcome. Where the first floor is the major floor the possibilities are most inviting, for all purposeful adult services should be kept on one floor if possible. See Ch. 33. But the strategic placement of major activities and their relationship for convenient service have to be studied carefully, else secondary items occupy valuable space, and building costs in proportion to essential rooms are consequently high.

At Houston, as in several "second story" libraries, the desk service is divided. Books are returned and new readers registered at the first floor opposite the entrance. The charging desk is in the circulation hall on the second floor, controlling the entrance to the reading rooms and book collection. Catalog here; also many popular non-fiction books. To the right the reference room, to the left the general reading room. In front of each an open loggia for outdoor reading. Under reference, the closed stack.

There is a very large periodical room in a wing that projects forward, reached by its own stairway from the first floor and connected to the reference room only through the loggia. This separation seems to cancel one of the greatest ad-

vantages of the extended type of plan, the grouping together of related subjects and material about them. Some of the best reference material on all subjects is in the periodical room, in this case far from the center of reference work.

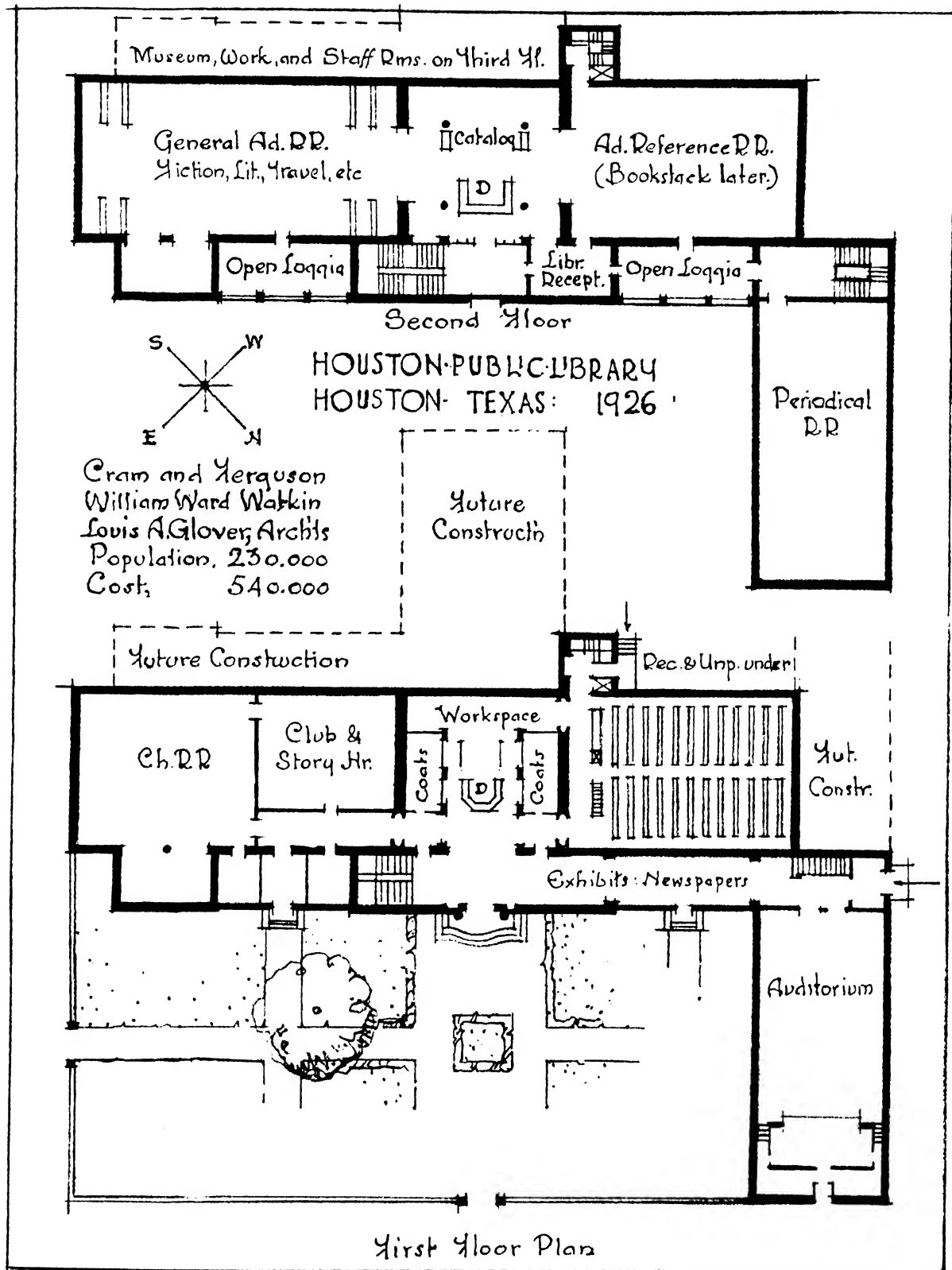
The wide entrance corridor, opposite the main stairs, is used for exhibits and for current newspaper reading; it leads to the periodical room stairway and to the outside public entrance to an auditorium under the periodical room. The reasoning that led to this arrangement is not evident.

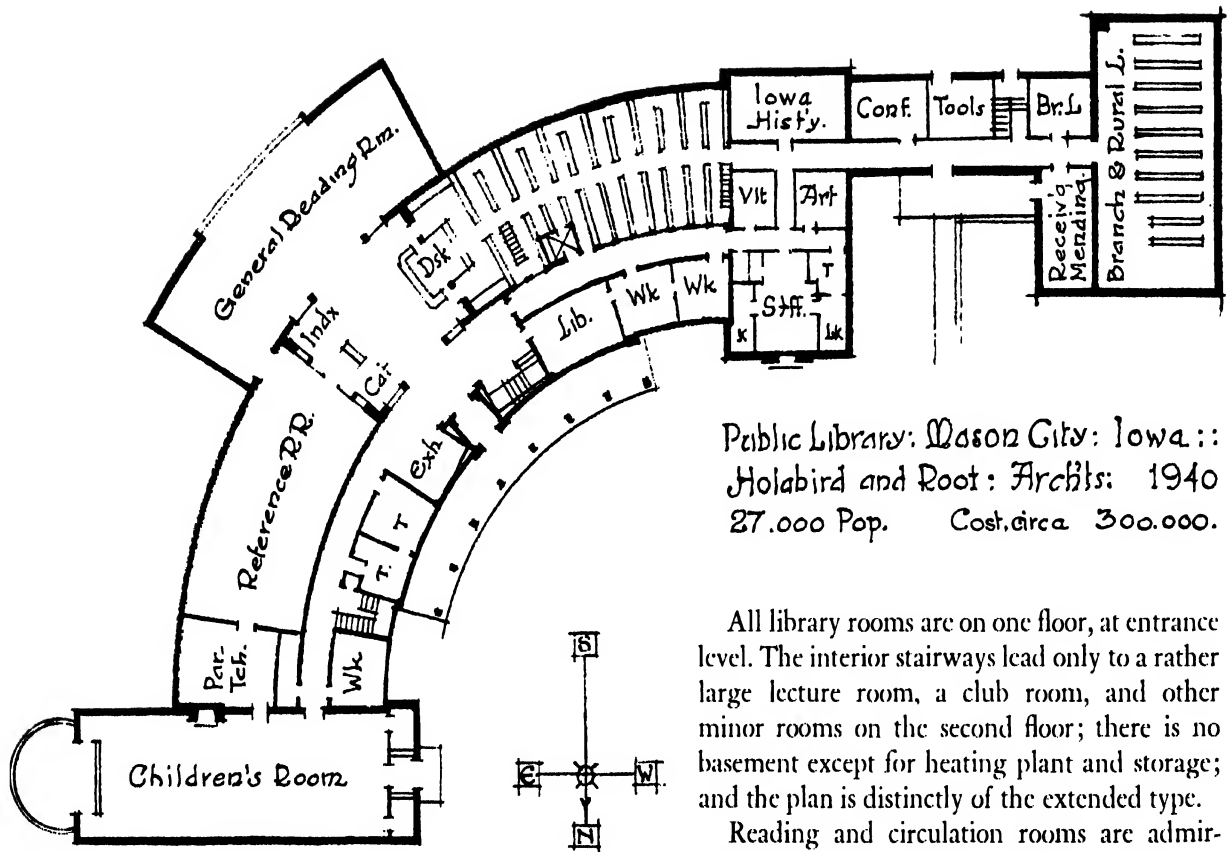
Administration, order, cataloging and staff-rooms are on the third floor, connected by stair and elevator in the square tower joining stack; reference room and receiving room in basement, and not unreasonably removed from desks and catalog. So there is a vertical staff communication and a horizontal public communication through the plan, a reasonable scheme, but not as consistently carried out or as compact as might be.

Children are on the first floor to the left with entrance either past the return desk or directly from outside.

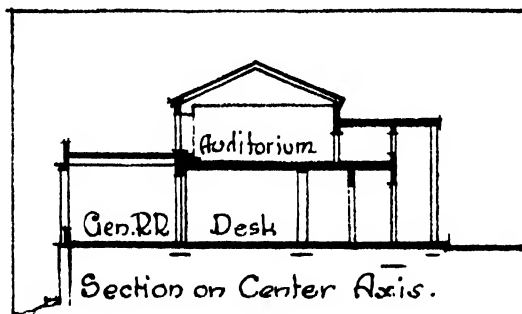
A rear wing is contemplated. Then the book-stack will be extended up. The reference room will have to be shifted to the new wing, separating it still further from periodicals, but the stair and elevator will be equally convenient in the new arrangement.

Houston is a handsome building in a fine setting, scholarly in design, following the planning principles and detail of the Italian or Spanish Renaissance. The danger that Traditional Form may dominate Function is evinced in its attenuated composition. The point is that, like the hollow square or the hollow U, the long narrow plan creates a long trip for everyone in getting from one end of it to the other, and readers and books should be quickly brought together.





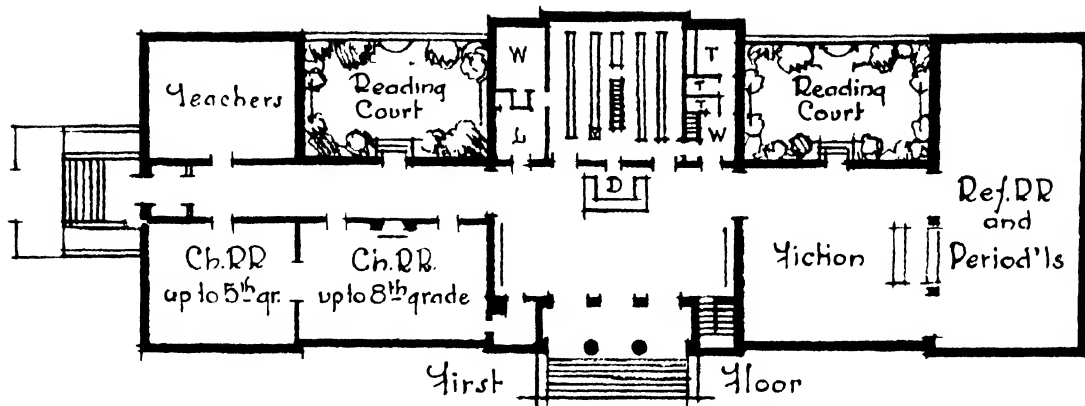
Public Library: Mason City: Iowa ::
 Holabird and Root: Arch'ts: 1940
 27,000 Pop. Cost, circa 300,000.



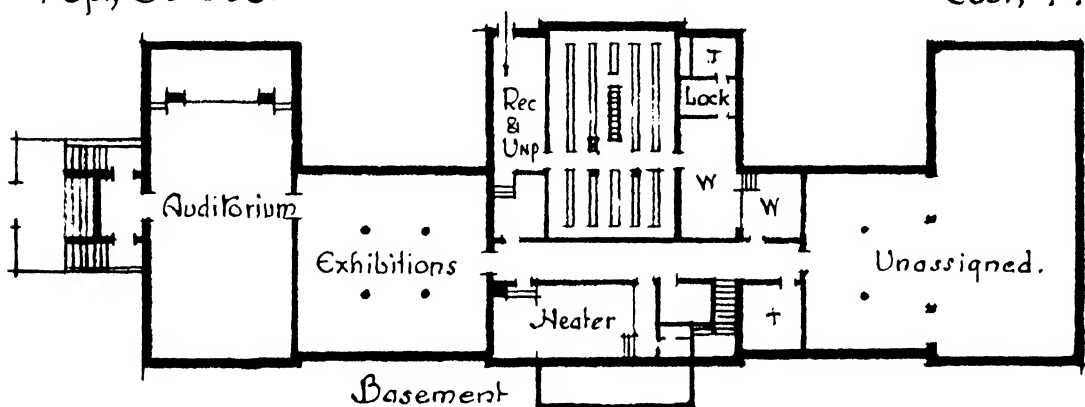
EXTENDED, NARROW PLANS: The new Mason City Library is on the edge of a curved bluff with outlook to the south and east, the curve of the plan following the shape of the bluff. The central windows of the general reading room are grouped together and sills are low, so there is a vista from the entrance vestibule clear across the building and over the country, "looking through to light." The position on the terrain recalls the Wellsville Library (Ch. 28).

All library rooms are on one floor, at entrance level. The interior stairways lead only to a rather large lecture room, a club room, and other minor rooms on the second floor; there is no basement except for heating plant and storage; and the plan is distinctly of the extended type.

Reading and circulation rooms are admirably concentrated in the center in a Trefoil relation, the stack to the right and the desk in front of it. The central vista is clear. Relative positions are those of the L plan (Ch. 25). Placing the extension division (branch work) at the right end gives the desirable sequence of desk, stack, workrooms for cataloging, etc., receiving room and extension, with staff room near the workrooms. Here they are strung out at great length, there seems an inordinate amount of floor space wasted by its use as a corridor, and an unnecessary subdivision into small units, each with a door on the corridor. This arrangement has tempted the trustees to seize two of the rooms and use them for the public, one for local history, the other for art and music. Consequently these subjects are dislocated from the public service area, the public approaches them through the working area, they need separate staffing and the original simplicity of layout disappears. If it were not for these two rooms, the corridor might have been omitted; a large uninterrupted



Austin Public Library: Austin: Texas. H. Y. Kuehne: Archt. 1933
Pop., 63,500. Cost, 149,000.



workroom at the right of the entrance would have concentrated the preparatory departments nearer the stack and catalog, increased flexibility, and saved the staff many steps.

The children's department at the left is excellently placed; workroom and parent-teachers' room next it where they properly belong.

The Austin Library, low and long, is in part open through from front to back for cross-ventilation, a vital matter here in hot summer if air cooling is not intended. There are two open garden courts for out-door reading and smoking, on the north side where they are shaded by the building's mass. The main floor is high above grade as in the Carnegie Leaflet diagrams.

The relation of rooms follows the smaller right-lefts with central rear-stack (Ch. 24) but the three spaces are almost completely separated

by partitions. The longitudinal corridor is rather unfortunate, necessitated by an end entrance to the building, but interfering with the cross currents of air achieved in the right wing.

Assuming the right to separate the major elements so drastically, the plan is simple and direct; the architectural character conservative, following the classic renaissance. The periodical space is in proximity to the reference space where many of the magazines are needed, but the bookstack is unfavorably remote. The catalog is closely accessible for reference work, but inconveniently far from the central desk.

Children are grouped by age according to the best modern practice (Cf. Mt. Vernon, Ch. 34). The high-school group have a special collection of books in the alcove to the left of the entrance, but no segregated reading place.

NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch.

THE LARGEST SINGLE-FLOOR LIBRARY: Pasadena is an impressive building of the highest dignity; the largest library substantially on one floor; one of the great library plans. Public rooms are lofty, unhampered in their height by the insistent heating problem of the North, or by the need of reducing the number of steps to a second story. Only over a few of the administrative and workrooms is there a second floor.

The main entrance opens immediately into the circulation department, a long and high-ceiled room with its service desks, entrances to the great bookstack, public catalog; tables and chairs; display of new books, and other interesting exhibits; regular circulating magazines, seven-day books, and a browsing corner of attractive editions. Thus anyone entering the building is at once not only in a room of imposing size and dignity, but in the midst of books and library activities. This is a virtue shared by the Indianapolis library (Ch. 30) and to a lesser degree by several other libraries, particularly the Open Plans (Ch. 32); but Pasadena and Indianapolis, since they are spread out horizontally, have the advantage of not requiring an entrance hall with elevators and stairs.

This long circulation room connects all the public departments, obviating the need of the corridors that waste floor space in so many large libraries. At the east end are the reference, fine arts and periodical departments, with an adjoining cloistered patio for outdoor reading, entered only from the building; at the west end the combined auditorium and exhibition room with outside entrance, the administration offices and in front the children's and young people's room with similar patio.

Supervision is excellent and the public easily directed. Anyone entering the building or entering any department can be seen from a desk. There are no public stairs or public elevators to supervise and keep clean, for the public uses only one level.

Administrative travel is reduced by grouping the various departments that have the most fre-

quent contacts and placing the groups so there is comparatively little communication from one end of the building to the other. Elevator service is needed only from the receiving room in the rear basement and to the upper or lower tier of the stack. No ramps; book-trucks can go anywhere. Workrooms are connected with all departments. Order, cataloging, mending and branch departments are across the rear of the bookstack where they have unobstructed north light. The receiving and shipping department, workshops and storage are under them. Besides space for heating plant, fan room, newspaper storage and a men's lavatory, these are the only basement rooms.

Much of the lighting is by clerestory windows; excellent except in the great central circulation room, where larger windows would have been feasible. Skylights only over portions of main stack room and children's stack.

The stack is almost completely surrounded with rooms that need contact with it, so there is a resemblance to the "center-stack" plans of Ch. 31; though in this case only one reading room is directly in contact with the stack.

The open-shelf-stack-reader relationships deserve study. In general, the arrangement follows the excellent old plan of having a compact general public bookstack accessible past the service desk, and this combination is at the "center of gravity" of the building, to the convenience of all concerned. The adult reference room adjoins the bookstack, the contiguous portion used for maps and miscellaneous material bearing directly on reference service.

Such an extended building is expensive because of long foundation walls and roof surface. The great area of outside exposure would be prohibitive in the north through heating costs. With the wider use of air cooling it will become equally costly in the South. The highly desirable arrangement of a large city library on one floor would be practical in a smaller area and with simpler outline; the architectural problem would then be to achieve rooms and vistas having such variety, interest and consistency.

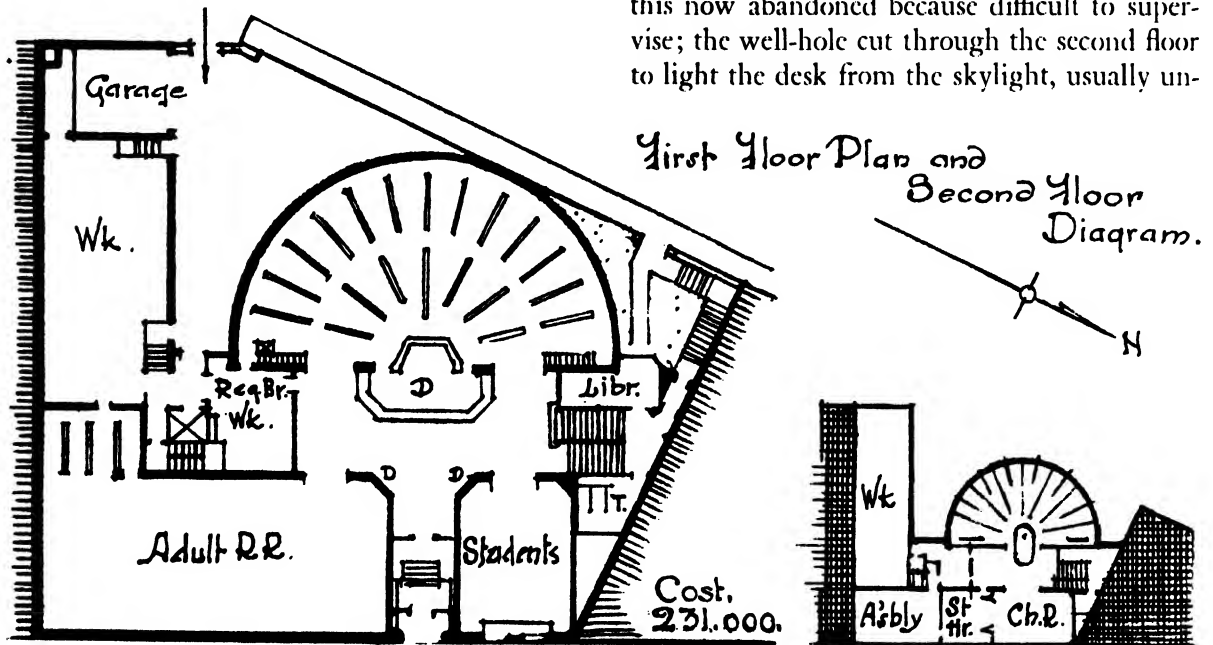
CHAPTER 30: THE LARGE CITY LIBRARIES: COMPACT: THE BOOKSTACK AT THE REAR

THE REAR VERTICAL STACK marks the Conservative among large libraries. The tendency now seems toward Subject-Departmentalization and a stack in this position is a handicap, for comparatively few reading rooms are in reach of the stack.

The old dictum that a stack requires daylight led almost inevitably to the rear-stack, as in New York, St. Louis and elsewhere. It still prevails in college libraries where the working carrels are best with daylight; but has lost its force in public libraries, with the recent tendency to seize all available daylight for reading rooms and workrooms. Some of the smaller city libraries with plots too shallow for a central stack, the Hild Regional Branch among them, placed the stack at the rear, rejecting the basement stack (Ch. 32) because they wished it accessible to the public.

Hild chose the old-fashioned radial stack be-

cause it seemed to fit the peculiar shape of the plot. It is a unique library in plan as well as plot, new in plan-arrangement and in modernistic treatment but following the old theory of fixed partitions between all rooms. It combines the functions of a branch library and a regional headquarters, serving a population close to a million. It relieves the Chicago central library of printing, bookbinding and book repair. Hence the great stack-space, the large circulating room and the three tiers of workrooms in the south wing. Noteworthy is the clever adaptation to an irregular site, the disposition of parts so that good lighting obtains everywhere, the compactness withal, and the proper relating of one element to another so administration functions smoothly. Attention might be called to certain details; central entrance and deep vestibule where the entrance steps are under cover; children on the second floor with outside stairway, this now abandoned because difficult to supervise; the well-hole cut through the second floor to light the desk from the skylight, usually un-



Hild Regional Branch: Chicago: Illinois: Pierre Blouke: Archt. 1931:

satisfactory, seemingly successful here; stack placed between the public library section and the regional work section, to be easily reached by both; librarian's room graciously close to the public rather than close to the working rooms; staff rooms in the pleasant upper air with access to the flat roof, rather than where they would be less attractive but more quickly accessible on entering the building.

Berkeley, with a developed Right-Left Plan, carries the bookstack the full height of the building and arranges the circulation desk and small workroom after the pattern of Pasadena. A general adult reading room with high ceiling is on the left, a much lower reference room on the right with children's room on the second story above it, an arrangement recalling the smaller Monteith Branch at Detroit (p. 273).

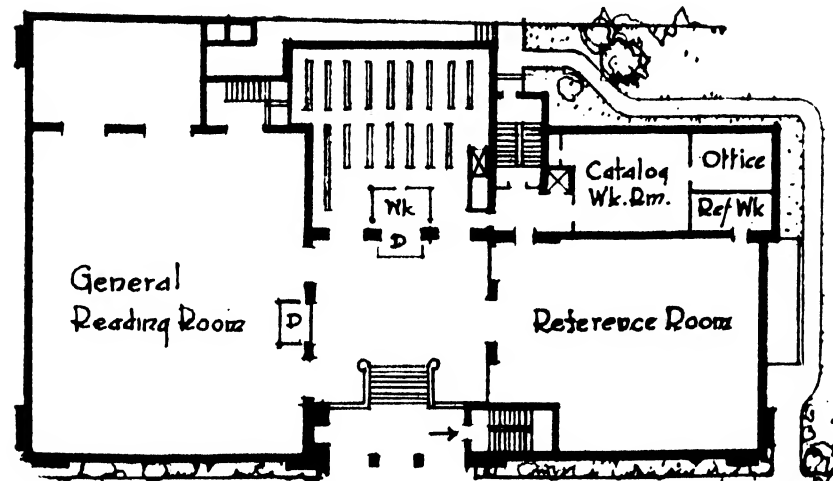
Each of the two adult reading rooms has its desk for readers' assistant, close to the central desk. Cataloging room near the catalog and on same level, an ideal arrangement. Librarian and staff in a mezzanine over it, so vertical communication between all these workrooms is easy

and direct, by stairs and elevator. All close to the stack, a compact and efficient grouping described in Ch. 18, and detailed on pp. 111 and 183.

Entrance is at sidewalk level. No enclosed vestibule. Unfortunately the hilly site has compelled the first floor to be raised nine steps. These confront a person immediately he passes the vestibule. Children have a rather long stairway to the right of the entrance, enclosed to stifle the inevitable chatter. Their room is low-ceilinged, intimate.

Some overlapping of functions and materials between the two reading rooms is discussed in Ch. 14, but this plan is deserving of careful study for certain merits of first importance: adult service is kept almost entirely on the main floor with children well handled through a common entrance; the work spaces, though not in all cases close enough to the public-service points, are related in a unique manner; the rooms by their varied height and shape escape the sameness characterizing many buildings; the space and structure are all utilized effectively and economically.

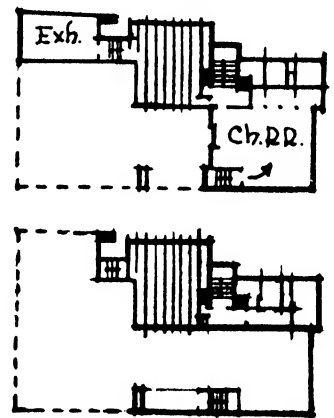
NOTE: All the plans in these ten chapters are shown at a scale of ten feet to one quarter of an inch. The diagrams accompanying them are at various smaller scales, selected to fit the spaces available..



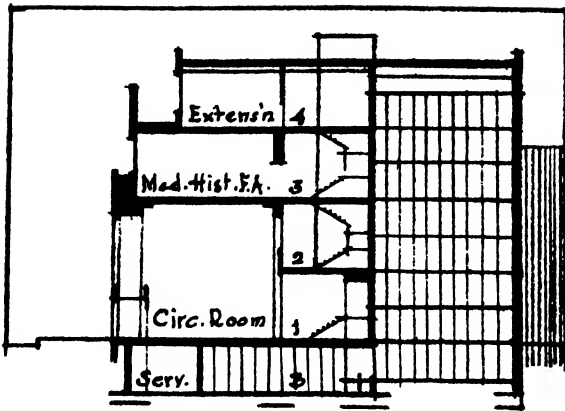
First Floor Plan. 1" = 40'.

Cost. \$246,000: Pop. 83,000. First Mezzanine Diagram.

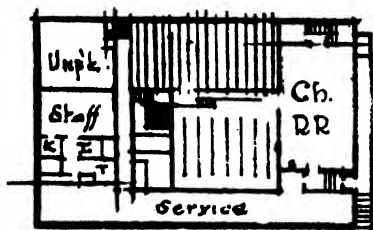
Second Floor Diagram



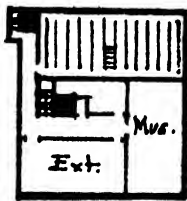
Berkeley Public Library: Berkeley: Cal: James Plachek: Architect: 1931:



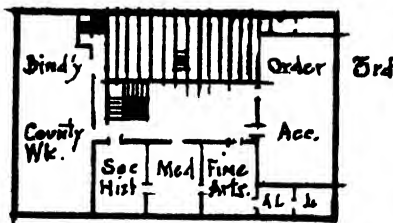
Section on Axis: Scale 40' = 1"



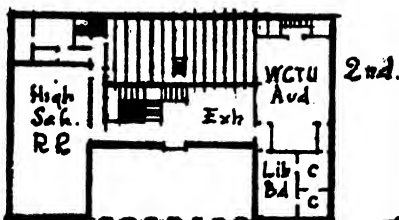
Basement.



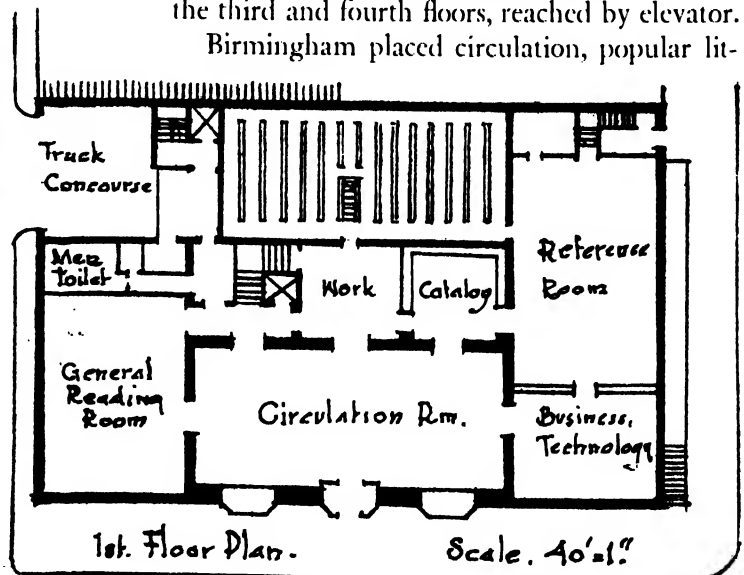
Diagrams at Scale of 80' = 1"
4th Floor.



3rd



2nd.



1st. Floor Plan.

Scale. 40' = 1"

RESTRICTED AREA: Evansville and Birmingham are fairly large libraries on small plots of ground in crowded cities. Therefore they were forced to distribute their departments on several floors. They chose vertical bookstacks, accessible to each story. At Evansville three streets gave light at front and ends, so the book-stack naturally was put against the adjoining property to the rear. Birmingham chose the rear-stack despite a certain amount of light available at the rear. The problems were thus reduced to placing vertical communications (stairs and elevators) most advantageously, relating reading rooms to the bookstack, and deciding how the departments should be divided between the stories, a very difficult and unsatisfactory matter.

Evansville kept all but the most easily detachable departments on the first floor, squeezing them into a relatively small area, with catalog accessible to all. High-school students were sent to the second floor, requiring that much of the reference material and part of the catalog be duplicated. A basement reading room with outside entrance, originally intended as a newspaper room, was reassigned to children. Fine arts, medicine, social history and music are on the third and fourth floors, reached by elevator.

Birmingham placed circulation, popular lit-

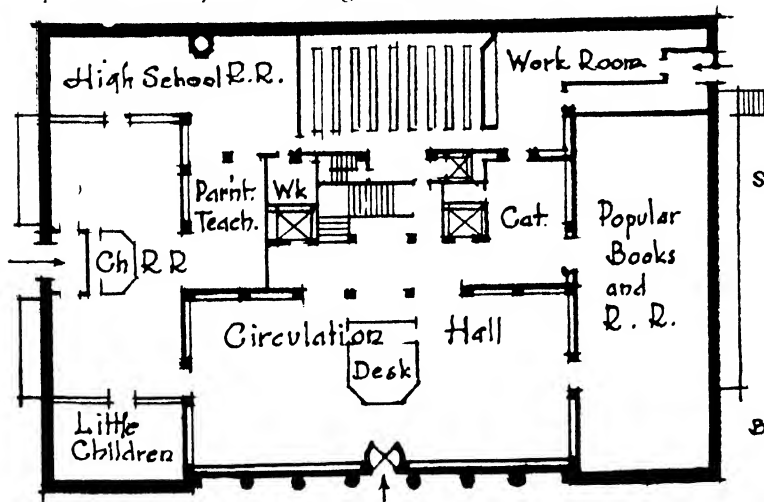
EVANSVILLE PUBLIC LIBRARY. EVANSVILLE. INDIANA: Pop: 98,000
Walker & Weeks: Archts: H.E. Boyle & Co: Asso. Archts. 1932 Cost. 338,000.

erature and fiction on the first, because most accessible to the great number of persons who come to borrow books; reference work, where readers stay for longer periods, on the second. Placing the catalog on the first floor at Evansville serves nearly all adult book users, but having it on the first floor at Birmingham discourages reference work, for reference readers on the second floor are separated from it. Also from many of the newer non-fiction books.

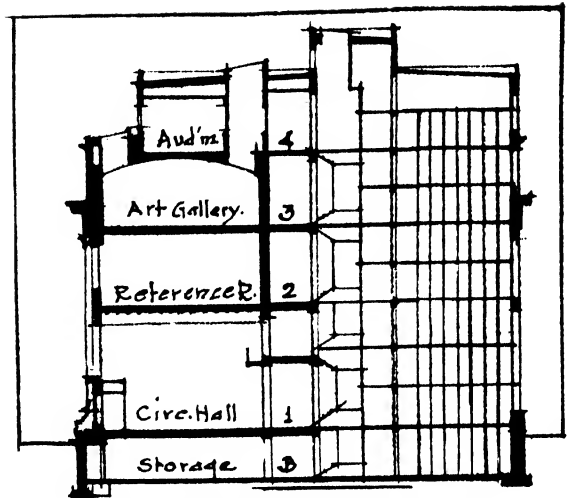
Birmingham penalized adult book use by giving up precious first-floor space to children. If this one story could have been cleared for adults, banishing two tiers of the stacks as well (for light from the rear is available), the unfortunate splitting up of the reading rooms that depend on the catalog and live non-fiction might have been avoided.

A rear-stack separated from the front by a barrier of hallways, stairs and elevators is always a difficulty. Birmingham demonstrates it in the second-floor arrangement where the general reference room, which calls for the greatest number and variety of stored books, is separated entirely from the stack with indirect route thereto.

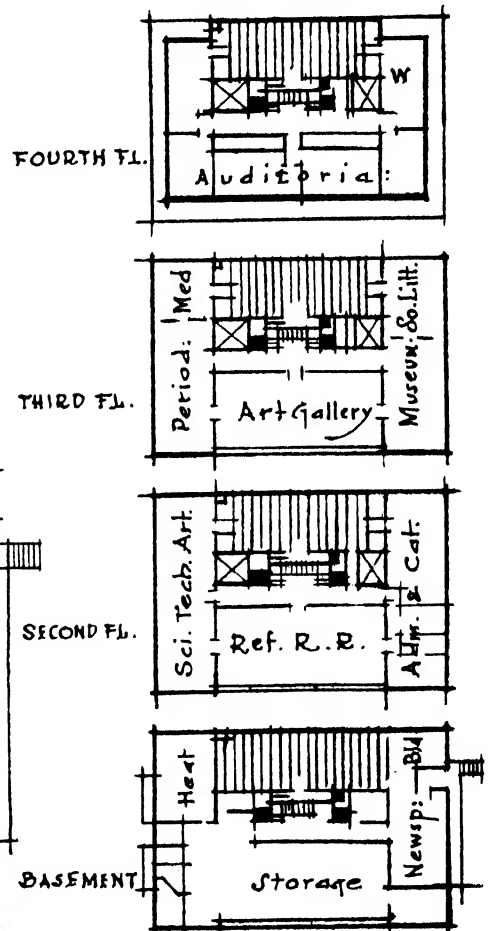
Both plans are admirable in bringing the public directly into a large and active room.



FIRST FLOOR PLAN: SCALE. 40' = 1"

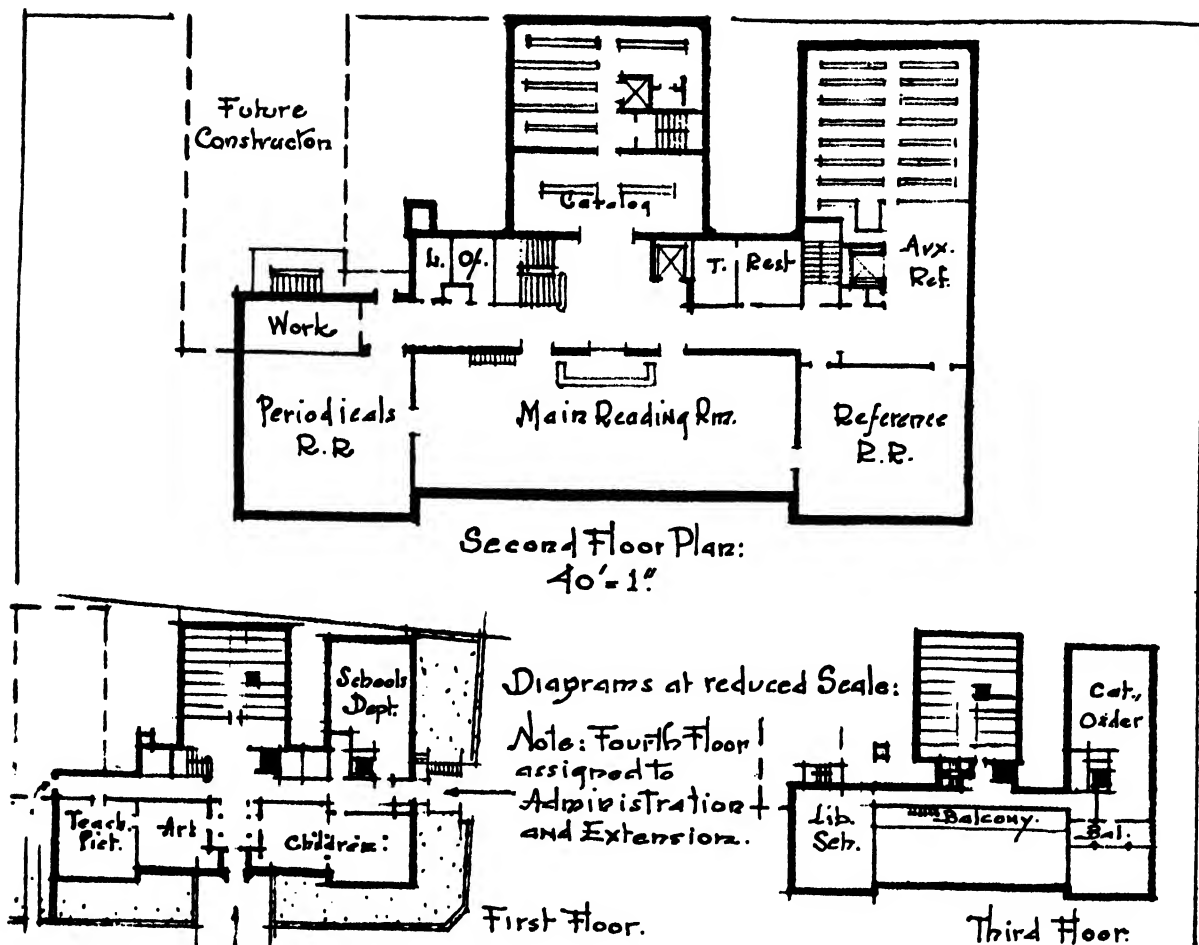


SECTION: SCALE, 1" = 40'



FLOOR DIAGRAMS

BIRMINGHAM PUBLIC LIBRARY: BIRMINGHAM: ALA.
Miller and Martin: Architects: 1927: Pop. 200,000. Cost. 737,000



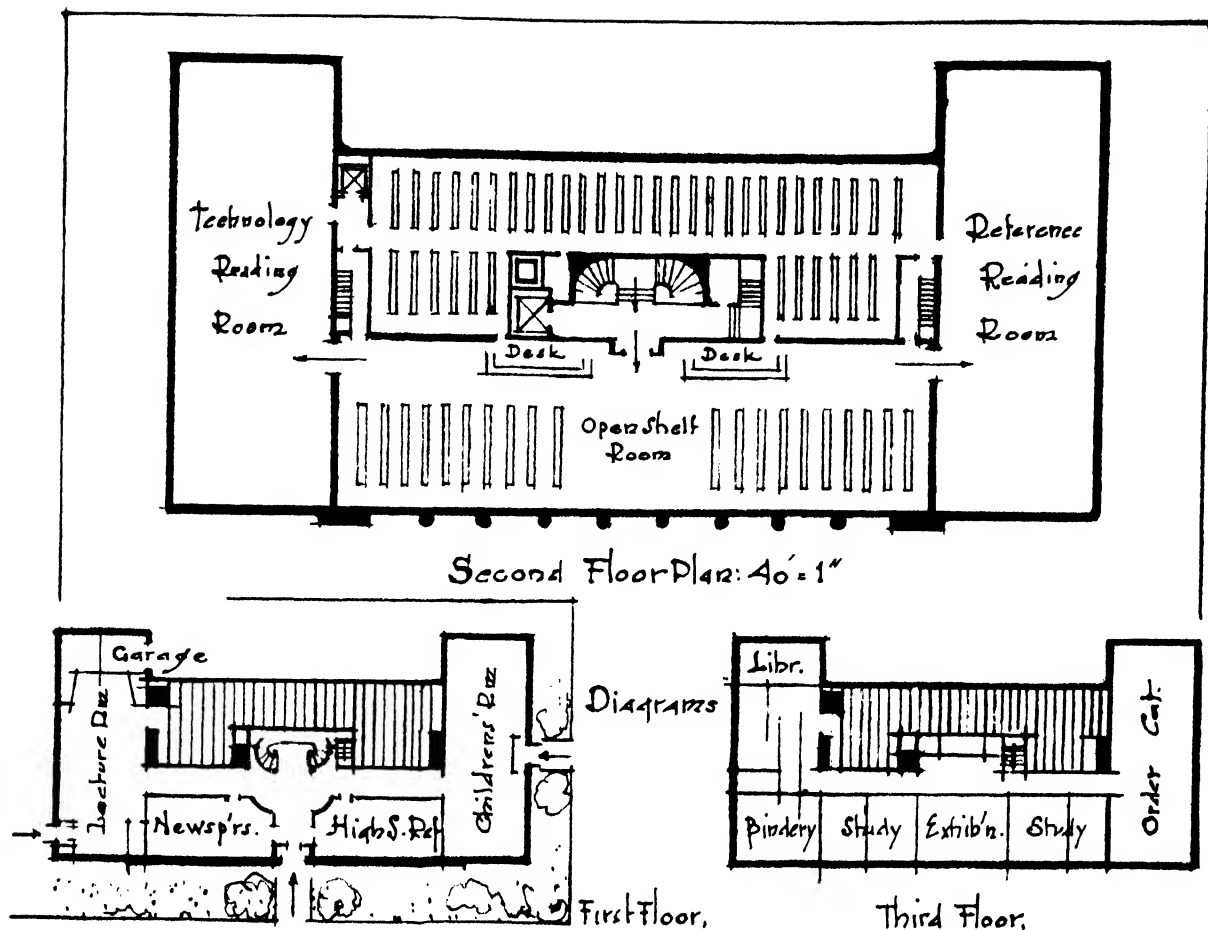
Queens Borough Public Library: Queens Borough: N.Y.C. Pop. 1,000,000
 R.Y. Schirmer and J.W. Schmidt: Architects: 1930. Cost: 588,000

SECOND FLOOR THE DOMINANT:

Queens Borough demonstrates almost all the faults the rear-stack parti can have, except that books used for reference are kept together on one floor. The second is made the principal floor with consequent stair climbing; all reading rooms split from the bookstack by corridors and stairs; floor-space wasted in corridors; entrance to an uninspiring system of hallways (*cf.* the gracious entrance of Birmingham and Evansville); an excellent and ample site consumed by wasteful and complicated shapes compelling several stories where equal and more efficient space could have been obtained even on a single floor covering all the plot. Recent arrangements, shown in these plans, have improved conditions

somewhat; but this plan is introduced as a warning example of what not to do. There is one interesting feature, a depressed lawn or planted moat around the building, of great benefit to the basement rooms (see Ch. 12).

Bridgeport is an interesting comparison with Queens Borough, on a plot that is almost a duplicate. It, too, has selected the second as the principal floor and the rear-stack parti. The entrance is equally uninspiring. Here all similarity ceases. The arrangement of the principal floor (the second) dominates the plan. The objectionable corridor-system is eliminated. Desk divided, so direct contact with stack is achieved. The public enters between the desks directly into a circulation room with all the popular books around



Bridgeport Public Library: Burroughs Building: Bridgeport, Connecticut:
 Y. J. Dixon and C. S. Palmer, Architects. 1927. Pop. 150,000. Cost, 580,000

the wall, under the high windows, and in free standing cases, a very large collection directly accessible to readers. A readers' adviser, the catalog and a few reading tables are in the center. It is a substitute for the longitudinal corridor as the approach to the quiet reference and technology rooms at the ends, where casual readers may take seats if they desire. Each of these two rooms connects directly with the main stack, so the attendant in charge can quickly get any book required, and the stack is in a measure departmentalized. A most ingenious, compact and simple floor plan and withal entirely new. There is complete control.

The first floor, too, is well arranged but not unusual. High-school students are unfortunately

separated from contact with adult reference, a system difficult to enforce and requiring duplication of many books and a part of the catalog, but grateful to older readers. Children have their own outside doorway for use in the busy afternoon. Bookstack adjoining.

Bridgeport seems one of the least objectionable of the libraries with dominant second floor. The first story is two stack-tiers high, as low as practicable; the departments selected for it the most easily detachable; entrances at grade, with the minimum of steps to the second floor. There are libraries with similar allocations of space that have depressed this lower floor below grade to reduce the number of these steps (e.g. Albany, Dearborn, Ch. 27), an unsuccessful expedient.

CIRCULATION ROOM AT INTERMEDIATE LEVEL: Indianapolis is supreme among great libraries in one particular, that the entrance is directly into a splendid room with many books in evidence, books on all sides, two tiers of them, a first impression not to be forgotten. The great square piers, the gallery behind them with the richness of form and chiaroscuro that a peristyle affords, all the perfection of detail, color and proportion are amazing. With such an introduction it is difficult to critically dissect and analyze the plan.

As at Pasadena this great hall is the center of architectural composition, distribution of people and circulation of books. Its floor is at a level midway between the first and second floors of the wings in order to connect with both, though the connection with the upper or adult reading-room floor is stressed by the broad stairways at the ends. The gallery is level with the upper floor, connecting the wings. The public reach the lower floors of the wings by a passage under the front gallery; the staff, down a stair or ramp at the rear. This arterial system can be understood only by a careful study of the plan. Its varied levels do away with long stairways between floors but they make control difficult. The gallery for instance escapes all supervision.

The two functions of charge and return were originally at the central desk, together with registration. Now the self-charging system is used, with verification opposite the desk at the head of the stairs. Thus there is oversight of the entrance, lacking at first.

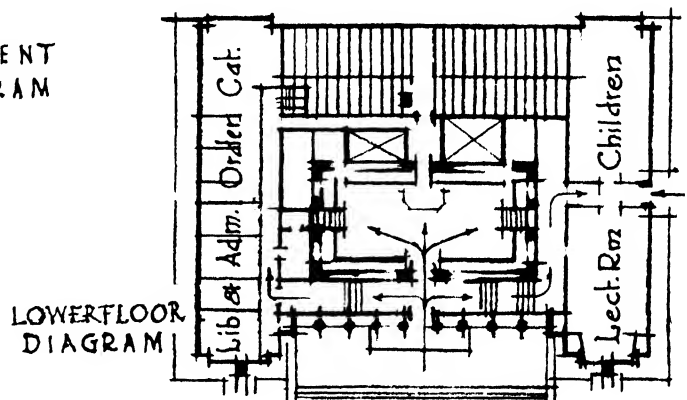
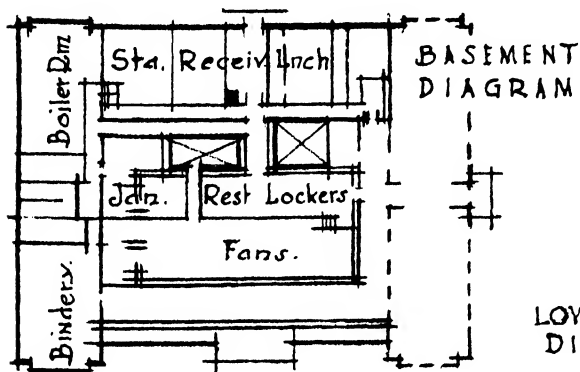
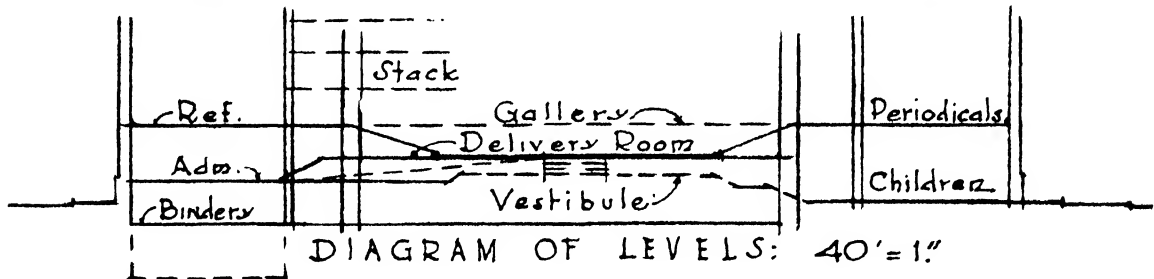
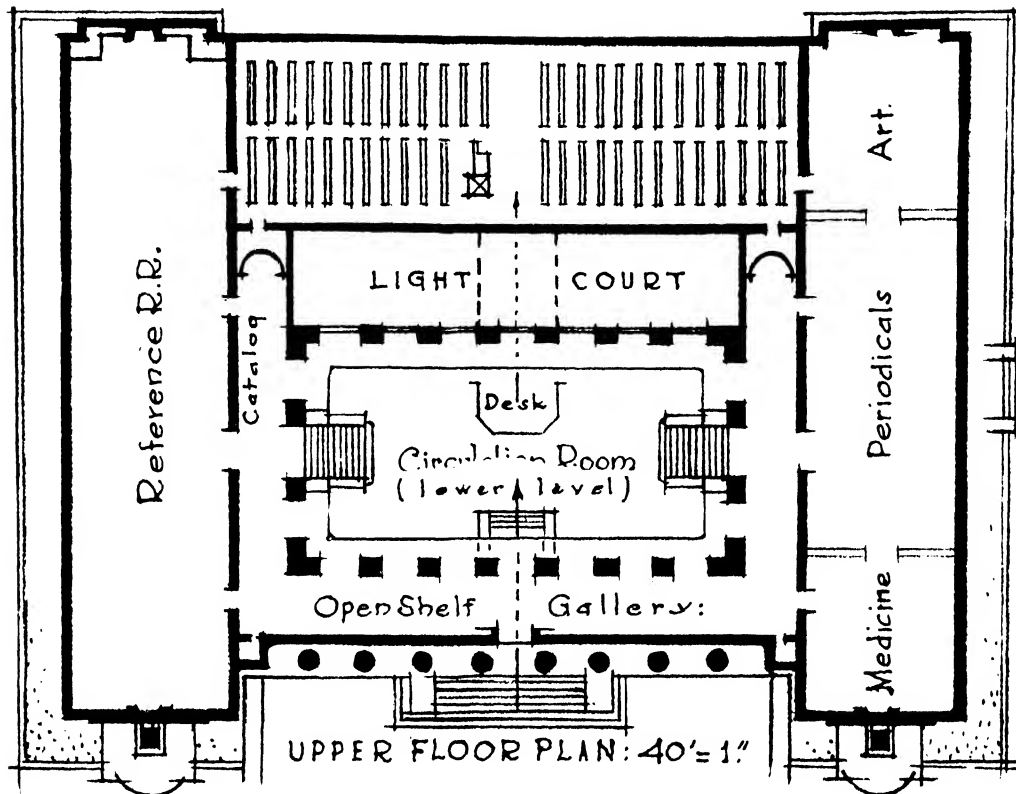
The circulation room and its gallery contain the fiction and popular books with a few tables and chairs for casual reading. The catalog is on the gallery against the reference-room wall, convenient to it, but not easily reached from the desk or readers' adviser in the circulation room. Other places for the catalog have been suggested but none of them is perfect. Any plan that places desk and reference room on different levels has this unavoidable weakness, that the catalog cannot be conveniently reached from both. Either stair climbing for readers and staff or a dupli-

cate catalog is necessitated by the separation.

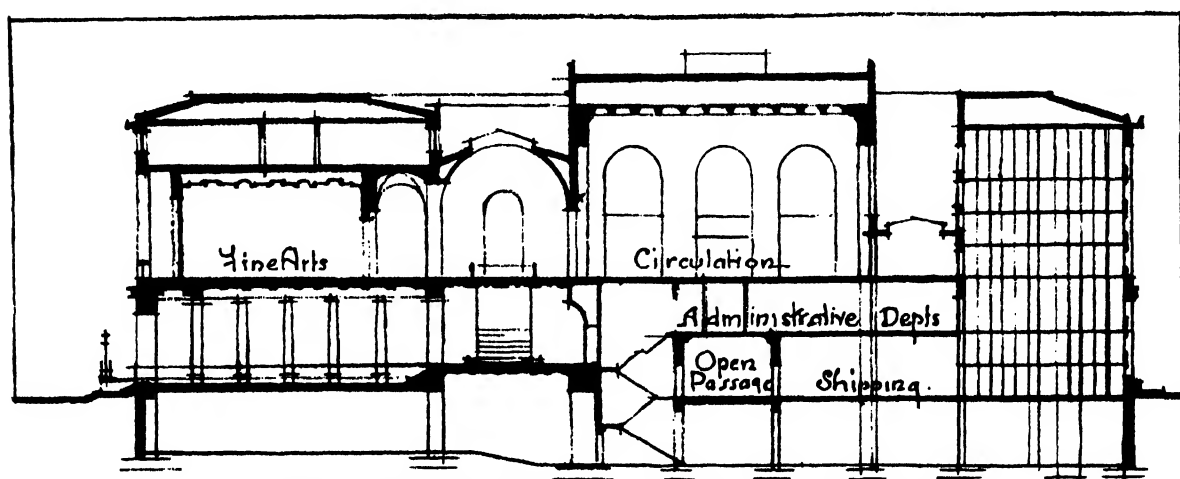
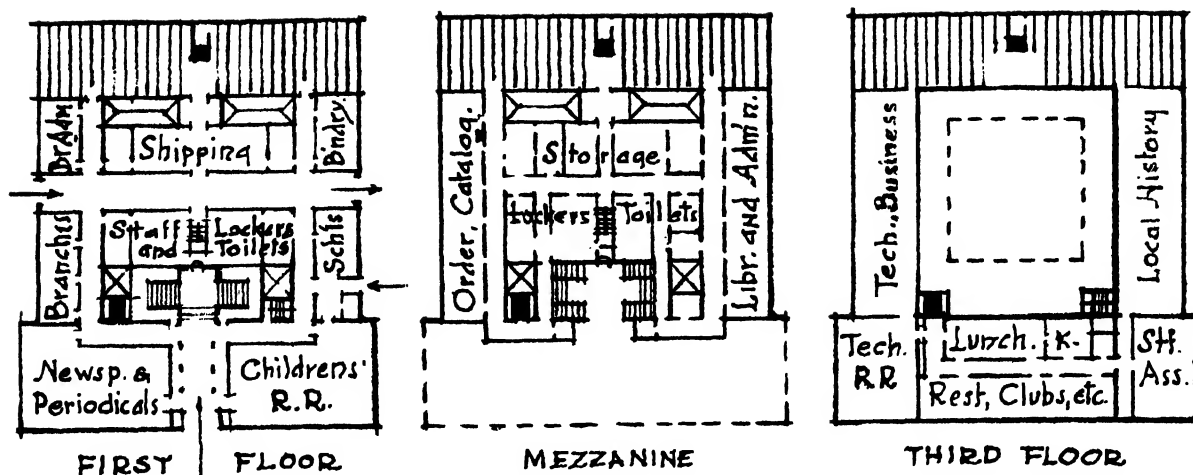
The circulation room has a level connection with the first stack tier; reference and art rooms with the second. The children's room is lower than any stack tier, on a level with the receiving and shipping room beneath the stack, and a few steps above sidewalk level. The administration, cataloging and other workrooms are slightly below the first stack tier level, connected with it by stairway and ramp (7% gradient). The concentration of Executive, Staff and Workrooms close together on the lower levels is discussed in Ch. 18. Both circulation room and stack are planned for daylight, front and rear. Hence the central court. The court is continued down by two light-wells on the old theory that even inner rooms should have natural light. Theoretically they have it, but actually not enough of it to do away with artificial light and there is consequent loss of potential work space in the important area behind the desk. There is also a serious lack of work space next the reading rooms, but this is a detail not due to the parti.

There is a peculiar appeal in the problem of designing an entrance to two stories that will give a natural approach to both. Attempts to solve it occur repeatedly in library design. The commonest and most obvious is with vestibule midway between the two levels and stairs up and down from it; the most splendid and imposing is with delivery hall on the halfway level and stairs up and down, perhaps at each end, perhaps elsewhere, the parti whose apotheosis is the Indianapolis Library.

The little East Branch in Brooklyn built in 1907 seems the pioneer of the type, the precursor of Indianapolis, though the architects of Indianapolis probably never knew of it. Without architectural formality, it was purely an attempt at a utilitarian solution of the problem stated above, and it has the weakness of them all, the production of three floor levels instead of two, with consequent handicap in use of the booktruck. After Indianapolis there were at least two others, Mobile, Ala., and Wakefield, Mass. (Ch. 25).



INDIANAPOLIS PUBLIC LIBRARY. INDIANAPOLIS. INDIANA: Pop. 290,000 :
 Paul P. Cret and Zanzinger, Borie & Medary, Architects: 1917. Cost, 526,000 :



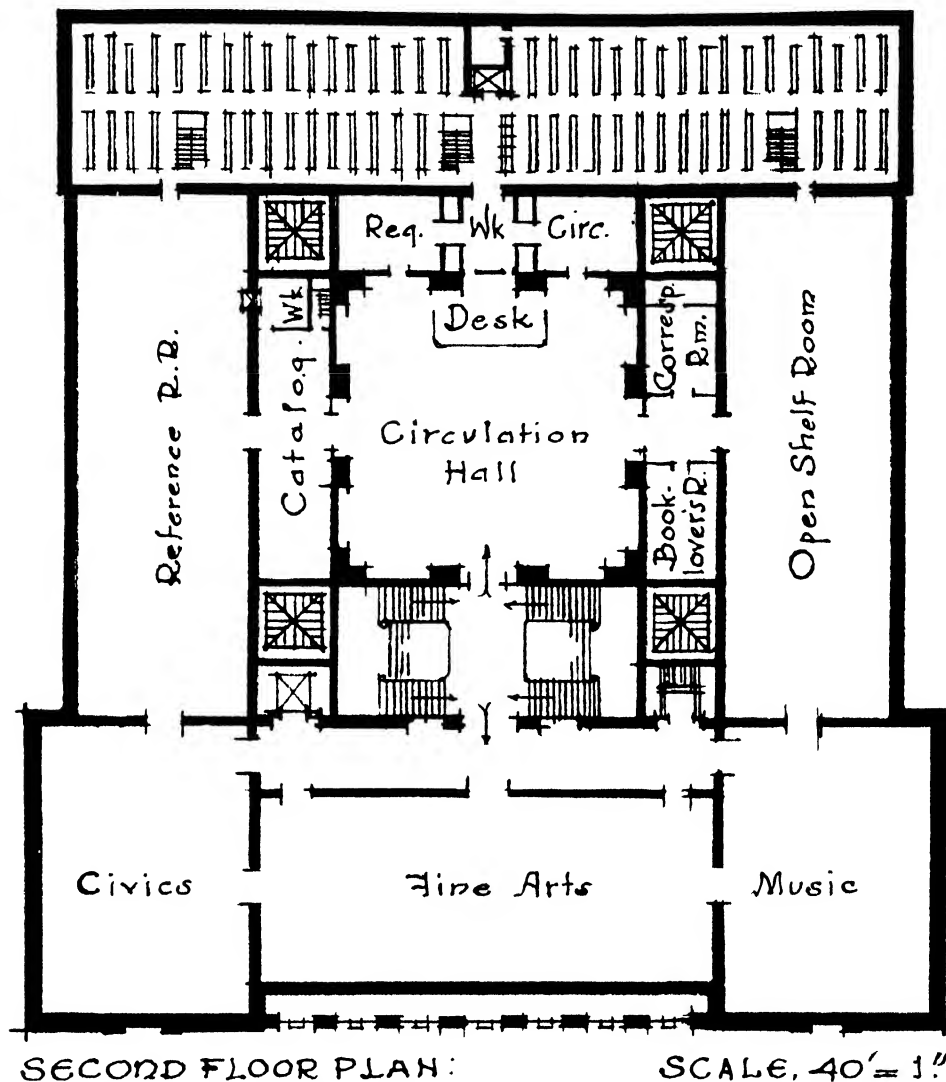
SECTION ON CENTRAL AXIS: SCALE 40' = 1"

CONCENTRIC-RADIAL THEORY: Detroit is perhaps the most compact and efficient of the great libraries built in the era of tradition, when the second floor was considered the most important, stair climbing accepted as a matter of course, and a bookstack assumed to need natural light. As with Indianapolis, it is difficult to analyze it critically because of its rare beauty of form, of detail and of classic plan.

Naturally the plan of the second floor dominates. The twin stairways from the entrance floor lead to a central square circulation hall; distribution thence to an outer series of reading rooms. There is an inner series of low rooms with a continuous light court above them—workrooms behind the desk, catalog to the left next reference room and near the desk, minor

rooms to the right, the stairways in front. An efficient arrangement, yet in accord with the obsolete postulate that all rooms need outside light, a postulate that disrupted the smooth functioning of other plans (e.g., the obstructing light courts in Indianapolis).

On the first story the front rooms only are used for the public. The area behind them back to the bookstack is in two levels and all given to staff services; shipping, bindery, staff lockers, etc., on the lower, entered from a service driveway that goes straight through the building; administration, order, cataloging, storage, etc., on the mezzanine over it. Each story is at a stack level; all proximities are considered (e.g., catalogers near catalog and stack, etc.); an efficient grouping together of service, though unfortu-



DETROIT PUBLIC LIBRARY · DETROIT · MICHIGAN · Pop 1,000,000.
Cass Gilbert, Architect. 1921. Cost. 2,775,000

nately work spaces adjoining the reading rooms are lacking.

The third story is important but the approach to it not obvious, and a stranger would not suspect its existence. One must assume the subjects put there are of special rather than general interest.

The general allocation of subjects in the reading areas might be questioned. Periodicals are grouped, not divided by subject. As in most of the older plans with the rear bookstack, it is assumed that circulating books and their readers,

reference books and their readers and stack books for all types of readers can be separated into three distinct units.

The large circulation hall, grand stairways, front corridor and double line of walls consume excessive space. But the radial approach to the second-floor reading rooms was a new and important contribution to library planning. Imagine the inner series of small rooms replaced by the bookstack, the four passageways through them retained, and you have the Los Angeles plan.

REVERSION TO OLDER TYPE: Philadelphia is the largest and most costly of recent American libraries, has the finest furniture and equipment and the most elaborate interior decorative treatment. In arrangement of plan it is surprising, quite reactionary, following the principles of monumental architecture in vogue a quarter century earlier, and ignoring subsequent advances in convenient arrangement. The second is the principal floor; a grand stairway is the central motif; the arterial communication is by a system of corridors around the stairway. Excessive travel results. Like the New York library, its many-tiered bookstack extends up to the floor of the rear reading room; though this, unlike New York, is not the general reading room of the circulation department where books are distributed to borrowers. Periodicals are grouped together, not generally distributed by subject. Subject-departmentalization is not completely developed. The reference room is on the first floor, separated from the main catalog and the bulk of the book-collection. It has its own books and abbreviated catalog. Other books are sent for on request. There is a large upper school near by and this room is greatly used by students.

Reading rooms are large, thereby simplifying oversight. Placed around the perimeter of the building they are well-lighted. The two courts light the four catalog corridors (two for the main catalog on the second floor, two for the L.C. catalog on the first), all the toilets, rest rooms and most of the service stairs. Skylights are used to advantage: over the great stairway, exhibition gallery, print exhibition room, and over Pepper Hall as a precaution against possibly insufficient light.

Each reading room, in accord with modern trends, has a large book collection available to readers, two tiers of cases around the walls in second-story rooms and a three-tier stack as at Cleveland in first-story rooms. But there is insufficient work space for reading-room staff, particularly throughout the second floor.

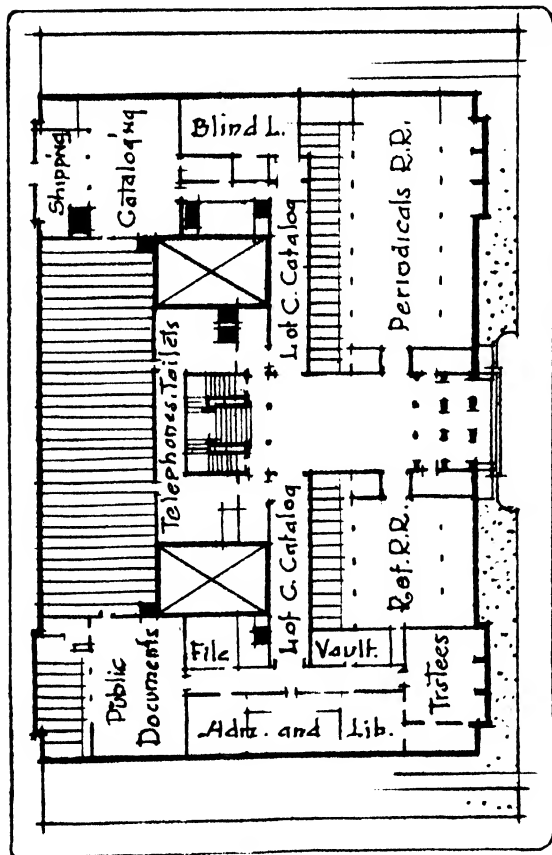
Administration and preparatory work spaces

are at opposite sides of the first floor, the work space rather crowded. Cataloging next receiving room, adjoining the stack and with as direct an access to the catalog as feasible. Other work-rooms in basement. Newspaper room, children's room, and all rooms connected with children's work are in the basement, almost entirely below grade, but amply lighted through sunken lawns flanking the building. There is a large lecture room in the basement, artificially lighted.

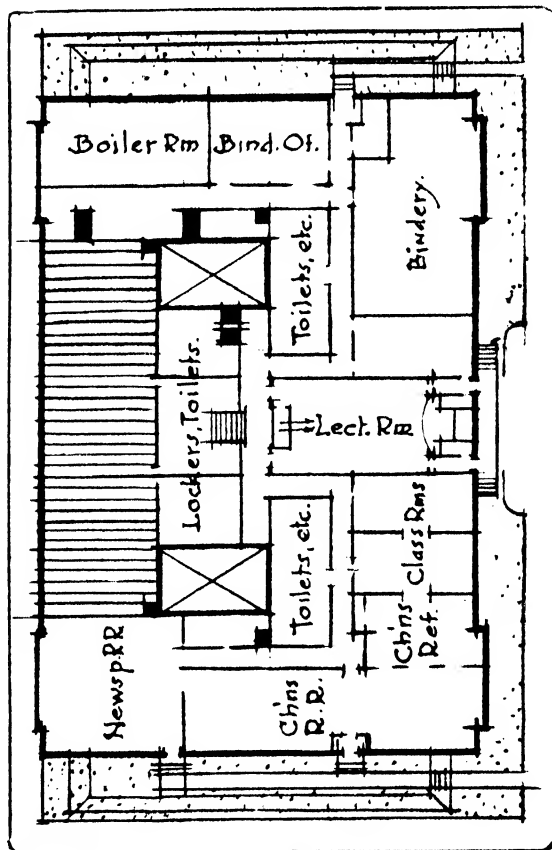
A new element in library planning is the development of an open reading terrace on the roof, entered from a penthouse reading room where patrons can take their books and read or smoke. Generous staff rooms with an efficient cafeteria are placed in another roof penthouse.

The general arrangement of a library or any other multistory building is dominated by the arrangement of its most important floor, usually either the first or the second. Comparing Philadelphia with the recent large Open Plan libraries (Ch. 32) in space-arrangement and space-assignment of the principal floor, the following facts are evident:

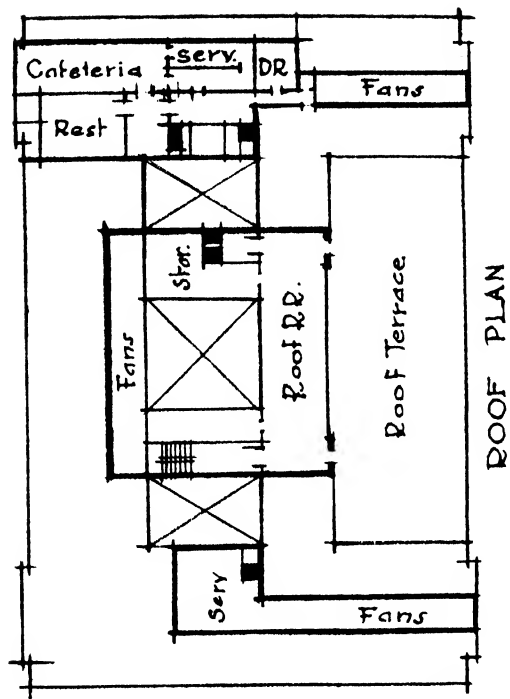
1. Philadelphia's approach is up through a central stairway so its entire perimeter can be assigned to reading rooms; the others, since their principal floor is at ground level, must assign a portion of the perimeter to entrance.
2. Reading rooms and their small work spaces occupy nearly the same relative space, Philadelphia about 61% of total area measured over outside walls. Baltimore and Toledo for example, about 62%.
3. Approaches take up equivalent areas, Philadelphia's great stairway equalling Baltimore's or Toledo's vestibule, entrance hall, public stairs and elevators combined, about 5% of the total area. An important stairway was proper in Philadelphia, since its principal rooms are on the second floor; the others do not need it, since their principal rooms are on the first. (This suggests the query, why should the second be made the dominant floor, unless space is gained?)
4. The walls and the service stairs and elevators take up part of the area in all the plans; but



FIRST FLOOR

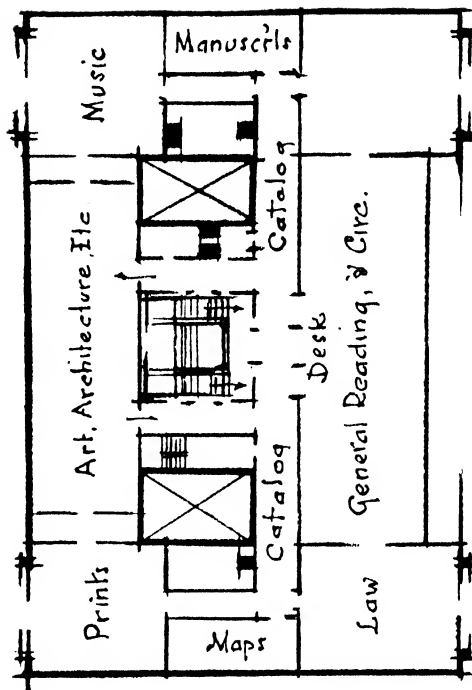


BASEMENT



ROOF PLAN

ARRANGEMENT-DIAGRAMS: AT MUCH
REDUCED SCALE: PHILA. PUB. LIBRARY



SECOND FLOOR

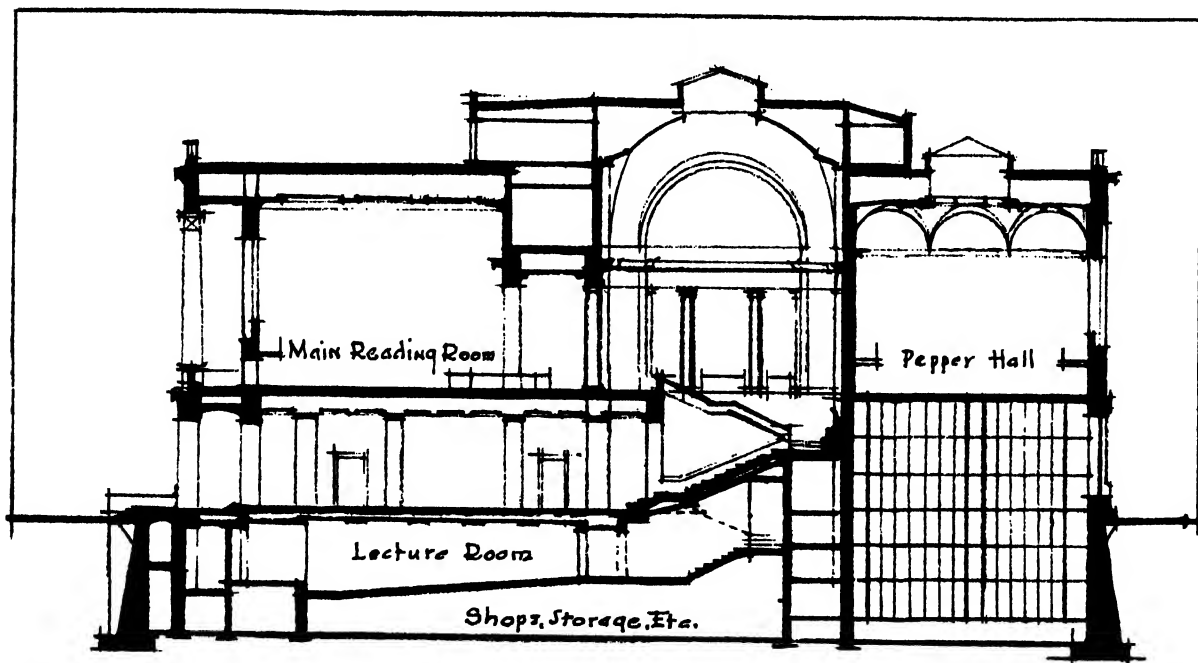
Philadelphia divides the remaining area between corridor system, light courts, toilet rooms and exterior colonnade; but the Open Plan libraries throw it all in one great central hall which contains circulation desks and catalog and serves for the approach to all the reading spaces.

5. Through lack of this central hall, Philadelphia is forced to place its circulation desk service in a reading room, as it is in a small single-room library. The confusion of a moving crowd is thus introduced, and the main reading room becomes a general circulation room with its reading space reduced. Desk space is limited and there is no chance of an adjoining work-room, so well provided for in the other plans. The catalog is put in the adjoining corridor, cut in two by the approaches, so there is a wide and

unfortunate separation of the first and last halves of the alphabet. Thus the circulation division is most awkwardly arranged, and gives the impression of being forced into a building designed without relation to function, instead of one planned to fit the library organism.

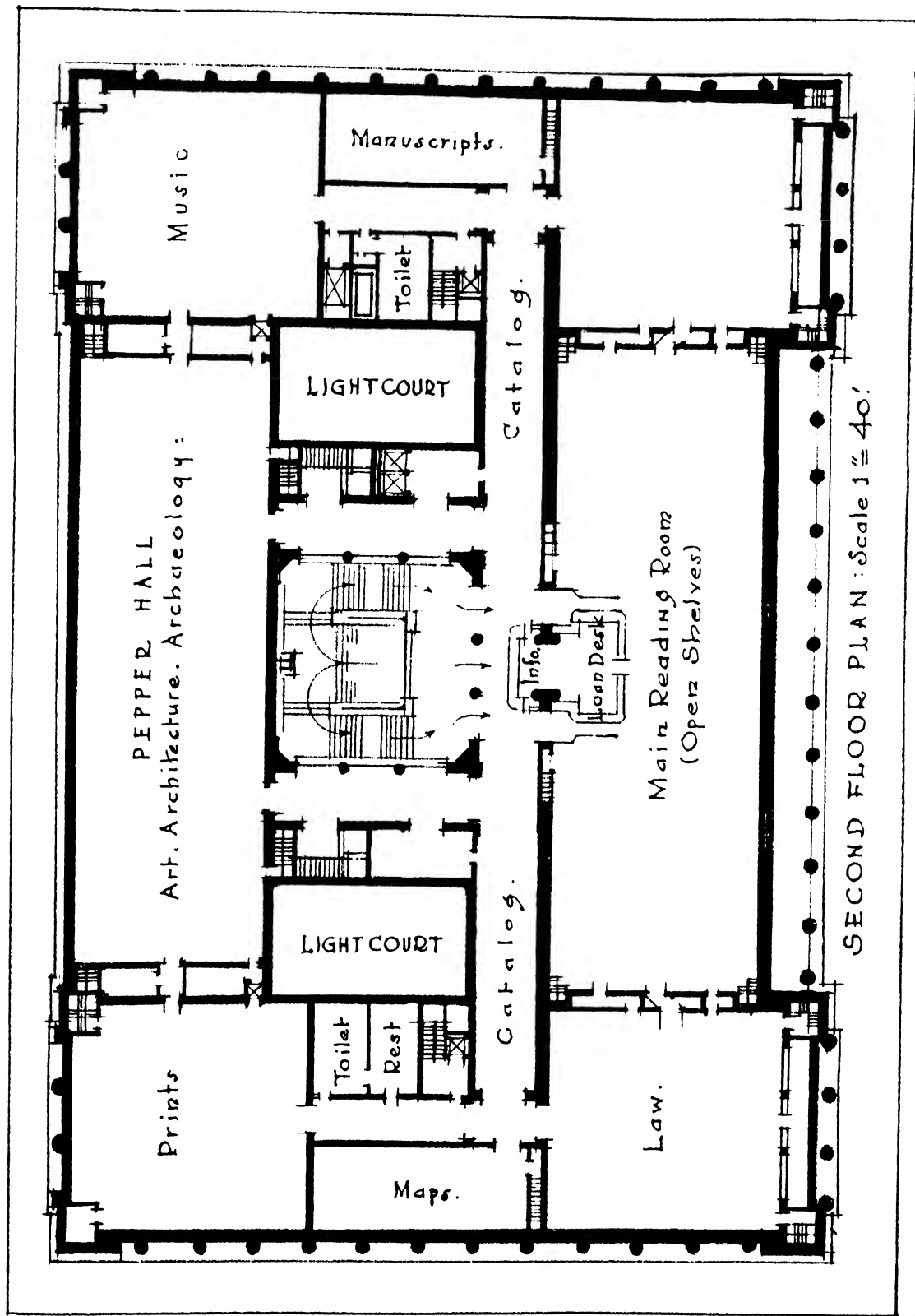
Details everywhere are most carefully thought out, and funds were sufficient for their development. The design of each room, all architectural detail, proportions, mouldings, modeling, show discriminating and conscientious study. The latest equipment was utilized, the best types of teletype, conveyors (up through the stack and horizontally under the floor to the charging desk and back), a spiral gravity chute, etc. etc. All furniture, shelving and storage cases are of metal, specially designed, the best obtainable. In these things Philadelphia is perhaps supreme.

NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



Philadelphia Public Library:

Section on Center Axis



SECOND FLOOR PLAN: Scale 1" = 40'

PHILADELPHIA PUBLIC LIBRARY: PHILADELPHIA: PA.
Morace Frombauer. Architect: 1927.

Population 1,900,000.
Cost. 6,100,000

CHAPTER 31: THE LARGE CITY LIBRARIES: COMPACT: CENTRAL OR TOWER STACK:

SINCE THE BOOKSTACK does not need natural light, it is reasonable to carry it up through the interior of the building and arrange the other rooms around it. "This leaves to reader and worker all the spaces on every floor that may be supplied with natural light, and also shortens the distance to the minimum between any book and book user."¹

The scheme was developed only a quarter century ago, apparently at Portland, Oregon. The architect gives credit to the librarian for it. One may expect to find the type fairly often in future libraries. Its intrinsic difficulty is the development of a natural approach to the rear rooms for if the circuit of reading rooms is complete it is necessary to go around the stack with consequent loss of time and effort, or through the stack dividing it in sections. It is fundamentally the opposite of the Open Plan (Ch. 32) which naturally brings people to the center and distributes them radially to their respective departments.

All the plans with a central stack room enclose it with walls. In the future a central-stack library may be built that omits these walls, the stack-construction forming the inner side of the reading space as the shallow stacks do in Cleveland. It implies free access of the public, but this is not revolutionary, for they have it in Pasadena. Any part of the stack might be shut off; perhaps the upper decks with gate at the stairways, a step toward the imaginary Flexible Library alluded to before, the "Library of the Future," a fascinating subject, difficult to avoid.

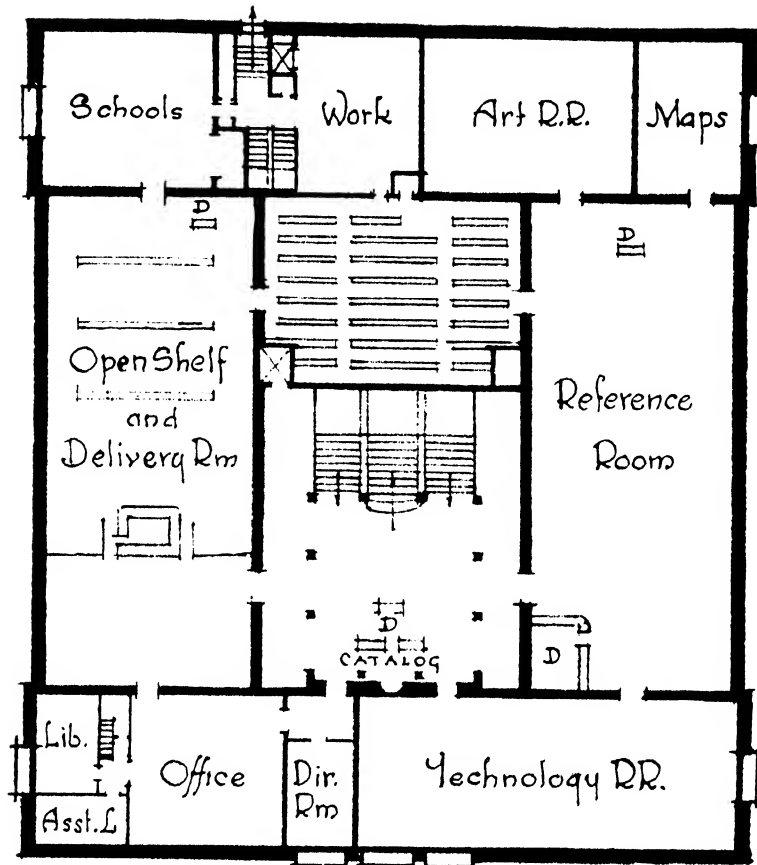
Portland sets a square arcaded lobby and monumental stairway against the stack room, the other rooms in series around them. The land slopes up diagonally; there are a dozen steps in front, yet the first floor is buried in the ground behind and has the character of a basement. The second is the important floor, with all adult

reading rooms except for periodicals. They are on the first floor, following the old faulty system. Catalog and registration in upper lobby, loan desk in circulation room to the left. This is an open-shelf room; wall shelving and low free-standing stacks, a few tables. Reference room to the right. Both rooms have doors to the stack but not near the desks. The technology reading room at front. Desks near together and near catalog. A good grouping, assuming that reference readers and borrowers of the same books can be separated satisfactorily. See Chs. 14 and 33. The art and map rooms are the only rear reading rooms and they are entered from the reference, so the difficult public passages are avoided. Preparation and staff rooms are grouped here, with the use of mezzanines, and with vertical communication from the basement shipping room through each story. This is an efficient concentration of service, though rather distant from the catalog. Administrative offices in second story front, accessible to the public but not near the workrooms.

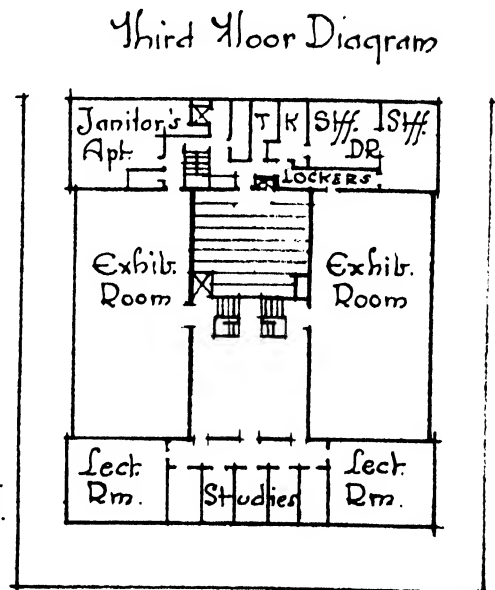
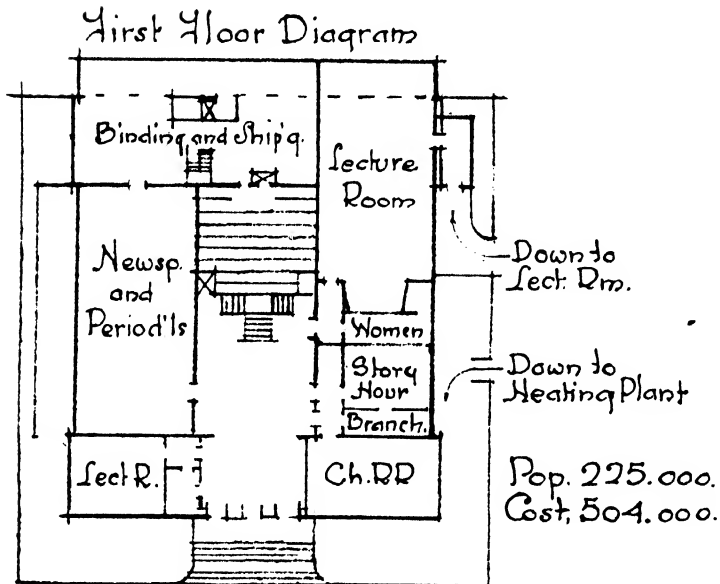
A direct logical plan achieving convenient access from one part to another without corridors. Daylight where needed but no courts nor lightshafts. Compared with more recent plans the interior walls are rather solid and continuous, the entrance steps excessive, the interior stairway far from the entrance and very elaborate, the circulation desks far from the entrance. It seems an average rule that the more recent the library building the fewer the steps and the closer the desk to the doorway. These things date a building. But the plan was a radical departure from former types, has great merit and has set good precedents.

The upward slope of the terrain made interior arrangement difficult and compelled the adoption of entrance steps.

¹T. P. Ayer. Richmond Public Library. An. report, 1930.



Second floor Plan: 1/4 Inch = 10 Feet.



Multnomah Co. Public Library: Portland: Ore. A.E. Doyle: Arch. 1913

READING ROOMS FLANKING STACK: Richmond follows Portland and improves on it, with practically all adult reading on the first floor. Children's room, school department (young people), and lecture room, all accessible from the street, are on two sides of the ground floor; shipping room at the rear; preparatory departments, offices and exhibit room on second floor. This minimizes stair and elevator use. As at Portland the land rises toward the rear but not so steeply. Since there is a lower floor, a long flight of entrance steps to the first is necessary. By depressing the strip of lawn at each side of the building, the basement windows are brought down to normal sill-height. (*Cf.* Queens Borough, Chs. 12 and 30, Philadelphia, Ch. 30).

A radical difference from Portland is in the position of the stairway and public elevator, here at the front so return-registration desk and catalog can adjoin the stack. Charging desk in open-shelf room close by. Reference desk in reading room. Thus, as at Portland, there is a decentralization of desk activities but a compact time-saving grouping of the closest related elements. Placing of catalog quite original, between open-shelf room and reading room, close to the center of each and forming the rear wall of work space behind the reading-room desk, demonstrating that the true library center is the catalog, since more departments bear on it than even on the desks. The cataloging room on the second

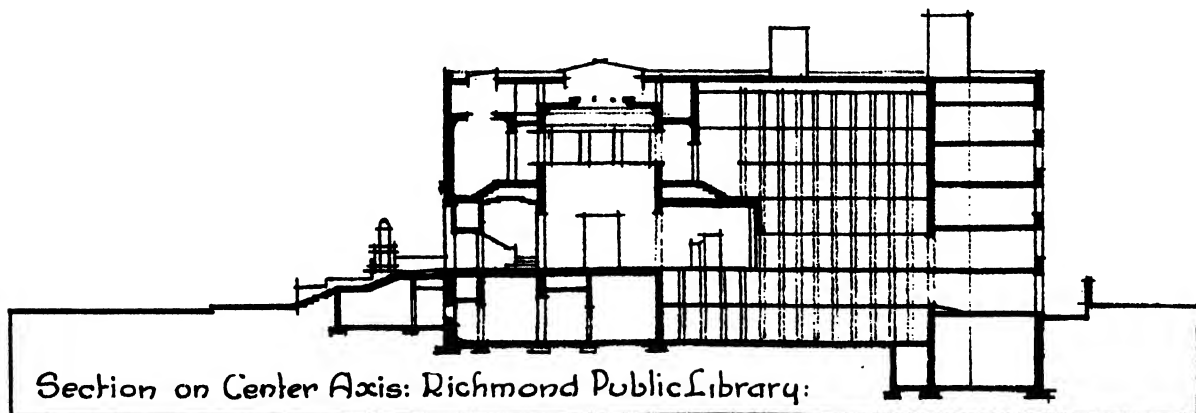
floor reaches it by a staff elevator with little horizontal travel. (See Ch. 17 for further analyses of this.) In internal composition the plan is the familiar H. Compare the last plans in Ch. 24 (where the buildings are too small for this composition) and the great Indianapolis Library (Ch. 30).

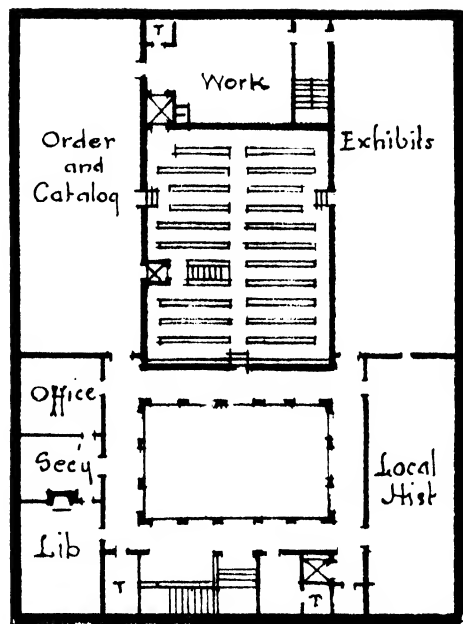
An early letter to one of the architects¹ mentions three main departments, reference, circulation and juvenile, and the futility of attempting to group them "when the minimum use of each will always require three separate staffs, and never have business so light that the theoretical single point of control could ever be taken advantage of." The three divisions were maintained, with catalog common to two of them. The juvenile, below, was divided into children and schools (young people). All divisions have direct access to the stack. This classification, contrasting with the full subject-departmentalization of certain very large libraries, might be considered a basis for smaller ones.

The return-registration desk, facing the entrance, receives new applicants and incoming books at once. The work space and space for registration files behind it frees the desks in the two back rooms from much routine. This circulation-department room or open-shelf room, as Richmond calls it, is a comparatively recent development, a room with few seats but many ac-

¹T. P. Ayer to E. L. Tilton, Jan. 13, 1927.

NOTE: All plans at scale of ten feet to one quarter of an inch. Diagrams at various smaller scales.



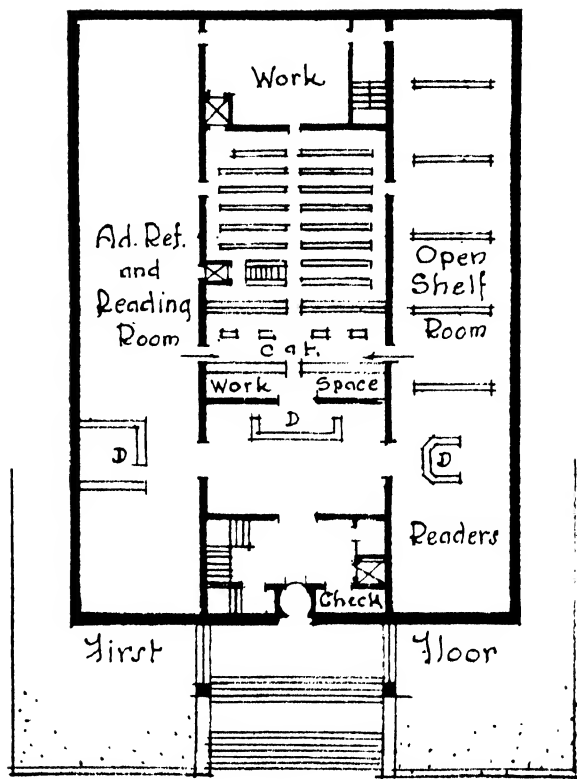


Second floor

Richmond Public Library: Richmond:
Baskervill & Lambert. Architects. Va:
E. L. Hilton. Consulting Architect.
1930: Pop. 183,000: Cost. 402,000

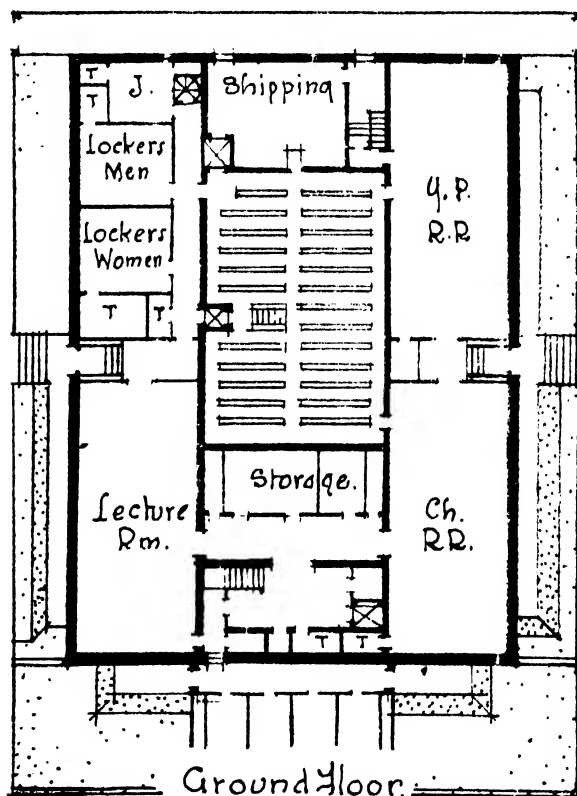
cessible bookshelves. Compare Bridgeport (Ch. 30) and Mt. Vernon (Ch. 34) which give it the central place and put the complete desk service there.

Floor-levels are not quite satisfactory. Though ground floor and first floor coincide with stack decks, the second floor and rear workrooms do not. The resulting steps or ramps are seriously awkward. The plan is unusually compact, with minimum space in halls and stairs, therefore maximum space for reading rooms, stack and workrooms; all without an impression of crowding. Careful relation of services gives minimum loss of time or effort. Only three stairways: public at the front, service at the rear, and stack; and three elevators, one near each. The generally assumed handicap of an entrance on the short side of the plot, the more important frontage, was completely overcome by careful planning. (Cf. York, Ch. 25.) Grade conditions made display windows impracticable.



First

floor



Ground floor

READING ROOMS AT SIDES AND REAR:

A triangular plot is difficult. Fort Worth uses it to advantage by choosing the apex for entrance, thereby establishing a center from which the rooms radiate, which in turn condenses the circulation space and releases the uttermost area for useful purposes. A straightforward plan that ignores subtleties and esthetic grace of form. Reading space at rear as well as at sides, so corridors are frankly introduced to reach it, deliberately breaking the direct contact between lateral reading rooms and stack that is usually valued in the central-stack plans. Communication between them is across the corridors. These terminate with fire-exit stairs, the proper place for them, but difficult to control. These stairs are used for service which results in a certain amount of supervision, though as they are the approach to the public toilet rooms the public may be expected there. The doors at the foot must be open at all times in case of fire; otherwise they are valueless. A recurrent problem in many a library, this need to maintain a free exit for persons yet not for books!

The direct contact between rear reading rooms and stack is preserved, for no corridor is needed there. But excessive travel is required to reach these rear rooms. This is a handicap to all central-stack plans and hollow-square plans that have reading rooms at the rear.

'To light the ground floor,' the first floor is

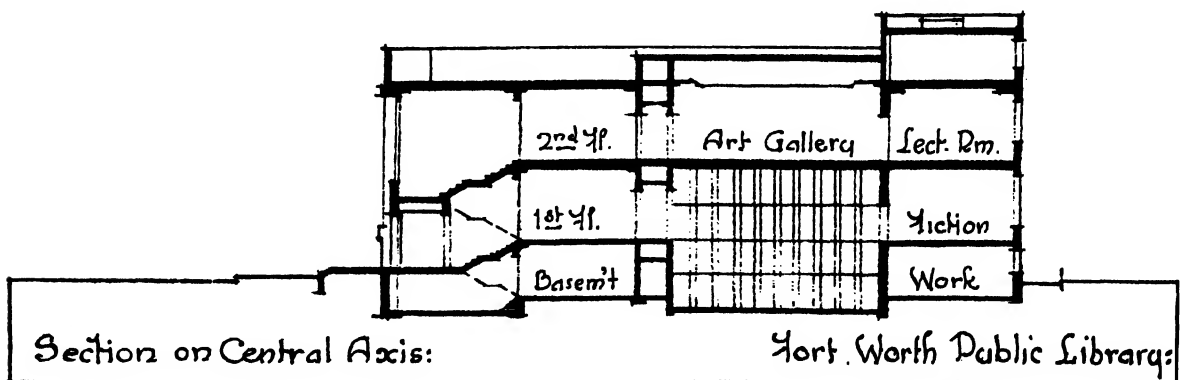
raised as at Richmond. Terrain is level, depressed areas at sides not required; nor is there space for them because building extends to sidewalk. Entrance steps all inside the vestibule, under cover, protected from rain or snow.

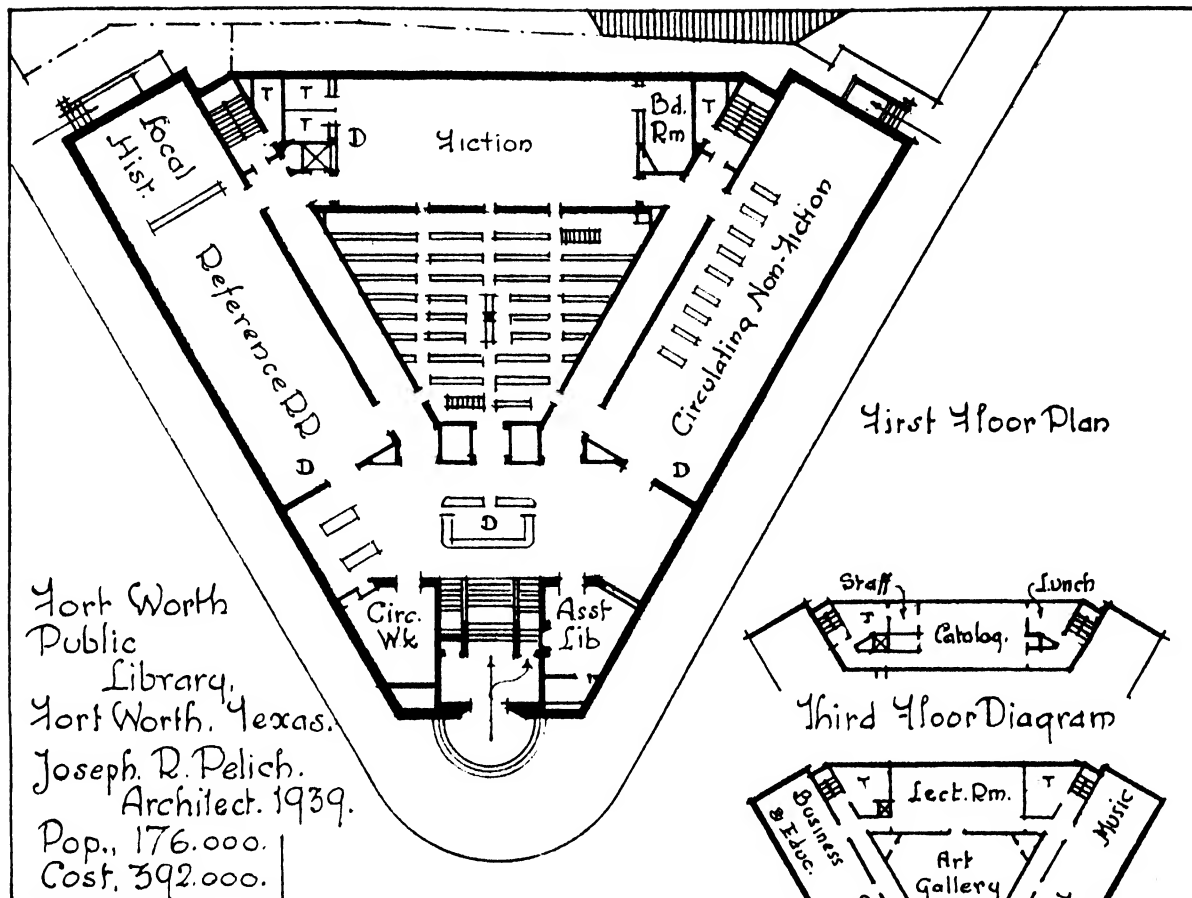
As in most large modern libraries, the subject-divisional system (subject-departmentalization) is adopted. Those sent to the second floor, as most easily dissociated, are Art, Music, Business and Economics, Science and Technology. Those retained on the first floor, and so most easily accessible, are (first) reference; (second) philosophy, religion and social science, literature, history and biography, popular magazines; (third, at the rear) fiction. The catalog is near the entrance to reference, not far from the "Circulation Room" but remote from fiction and the second-story rooms, though as accessible by stairs as it is possible to make it, an unavoidable difficulty when a book-collection is divided on two floors. Partial catalogs are necessary; reference questions require consulting books on the other floor with consequent stair-climbing. The penalties of such dividing are discussed in Ch. 33. The plan that uses every possible foot of first-floor space for readers has much in its favor.

The main desk is an island desk, strategically

¹We designate the Fort Worth floors in the same terminology used for other libraries. Fort Worth uses "First Floor" to mean the floor slightly below grade, which we call ground floor, etc.

NOTE: Economy of plan-arrangement must not be judged by the cost of a particular building, for other elements effect cost much more. Quoted costs include equipment and fees but not the land.

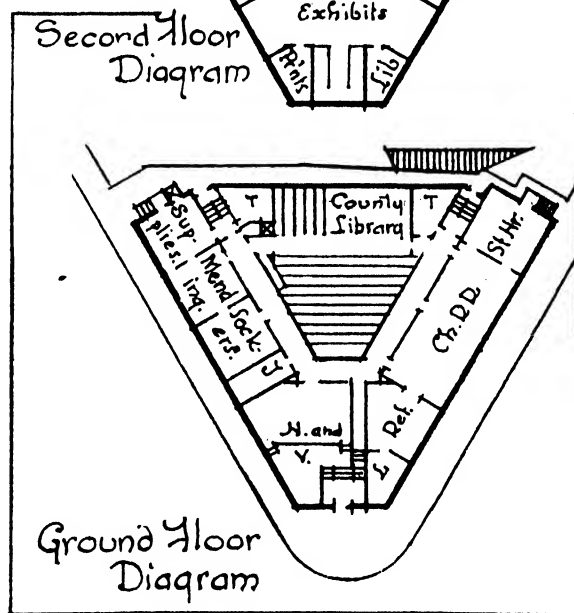
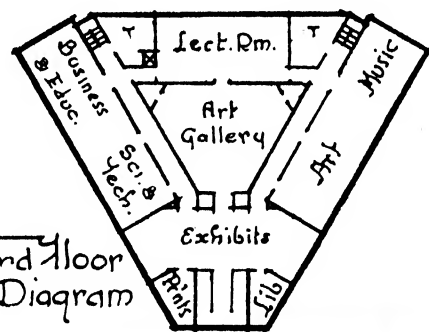
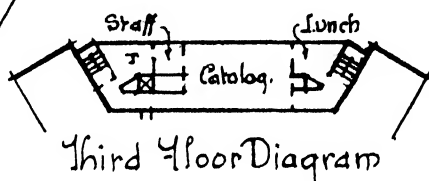




placed to control the entrance to the library and the stairs to second floor; large enough for much of the work within it, though there is a work-room near by; close to the stack and catalog, to entrances of circulation and reference room and their respective desks. The order and cataloging room is in a third story at the rear with unobstructed north and south light, connected vertically with stack and receiving and shipping room on ground floor, but at a great distance from the public catalog. Staff and dining rooms next it, a pleasant airy location.

Exhibition room and fine arts gallery on the second floor, the former serving as anteroom to the flanking reading rooms.

Children's reading room, story-hour, their reference and librarian's room are in a continuous suite on the ground floor, entered from the front vestibule through the flanking corridor.



THE HOLLOW SQUARE: Cleveland was the first great exponent of decentralization and subject-division.¹ It had been assumed that every large library must have its general reading room and stack room, drawn upon through a central delivery or reading-room desk. Cleveland combatted this, maintaining that books should be stored where they were used; that the organization should consist of a series of special subject-libraries, and that a reader should be able to go directly to the reading room devoted to his particular subject and find there all the books on that subject and staff-members specializing in it.

Cleveland met the new theory by a new plan, a hollow square with readers toward the outer face where the light was best, and bookstacks in two or three tiers along the inner face. The central space is generally open; but on the first floor, too valuable an area to lose, it is developed as a great vaulted cruciform room, the Brett Memorial Hall, lighted by large windows over the small corner rooms.

To a stranger entering, the general arrangement of the building is not obvious. He sees the stairs, elevators, checkroom, and the great hall at once but most of the reading rooms are not in sight. He needs to be directed as he would in an office building. Yet these are close at hand.

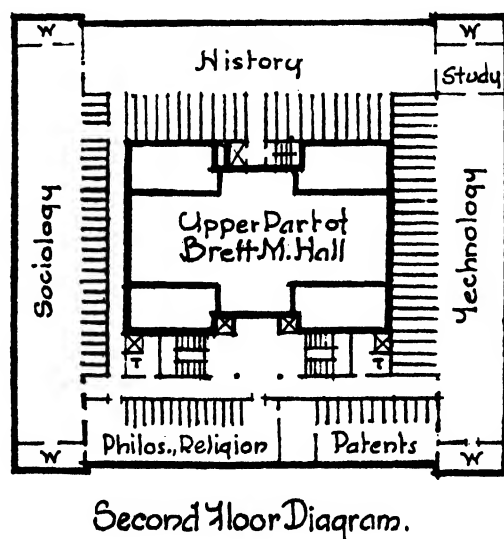
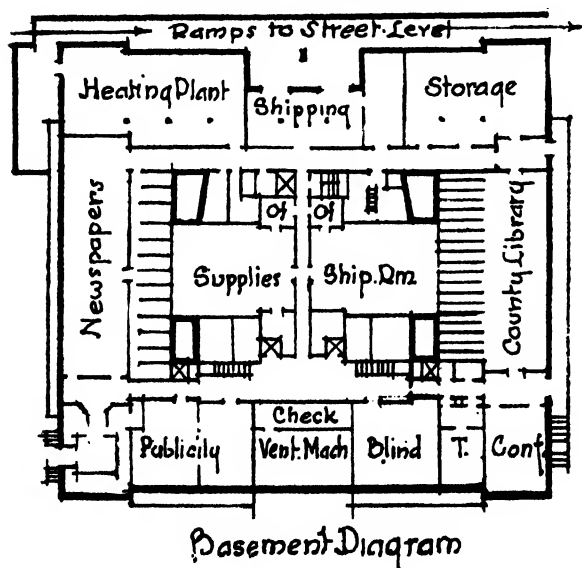
The distribution of reading matter is care-

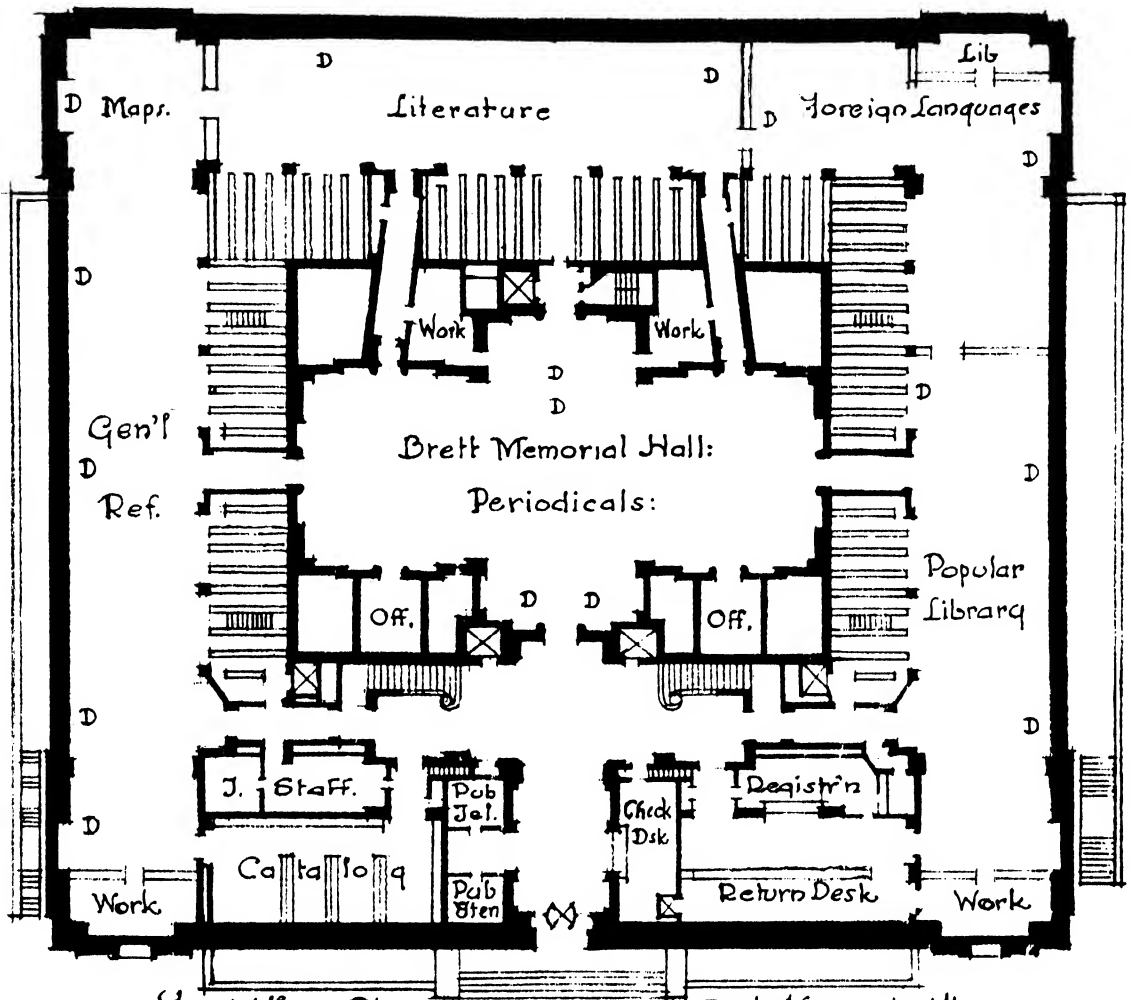
fully studied. Brett Hall, opposite the entrance, has the current periodicals and is used to a certain extent for general reading. The other first-floor reading rooms include popular books and fiction, general reference and literature. The greatest number of readers and borrowers therefore do not need to use stairs or elevators. All rooms interconnected, all but literature reached directly from the lobby and transverse corridor.

Newspaper room (with outside entrance) and library for the blind in the basement. Other subjects are on the second and third floors, the more general on the second, the more specialized and easily separable on the third. Books for children and young people on the third; since few attend without their parents, there is no necessity for a direct street approach. All the fourth floor is used for administration, preparation, and staff services.

The main catalog has its own room, near the entrance and opening into the reference room. It is not brought into prominence, for each of the other special subject rooms has its own catalog, and all draw upon the main catalog by tel-autograph. It is near the stair and elevator system, as accessible to all reading rooms as this type of plan permits.

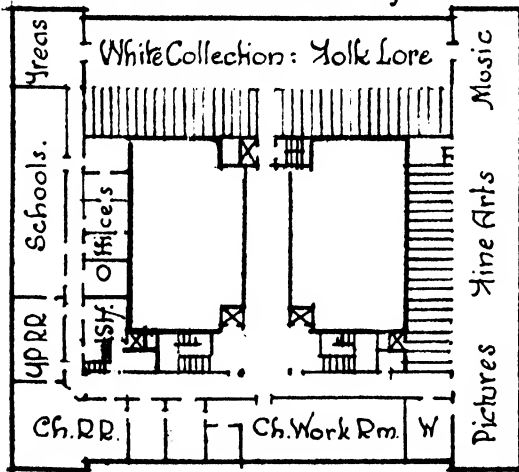
¹Earlier trials at Cleveland and Los Angeles are discussed in Ch. 14.





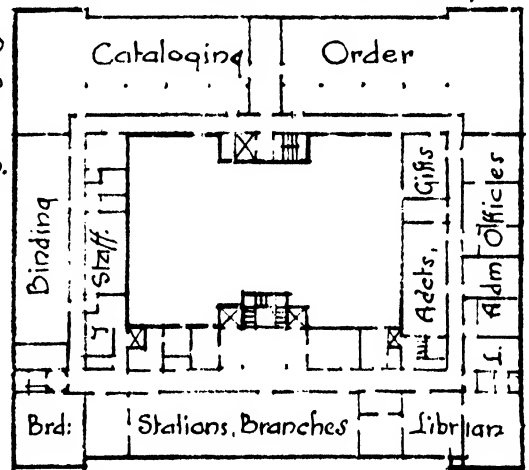
First Floor Plan Scale $\frac{1}{4}$ in = 10 ft

Cleveland Public Library: Cleveland, O. Walker and Weeks, Architects: 1925



Third Floor Diagram

Population
850,000
Cost,
5,000,000.



Fourth Floor Diagram

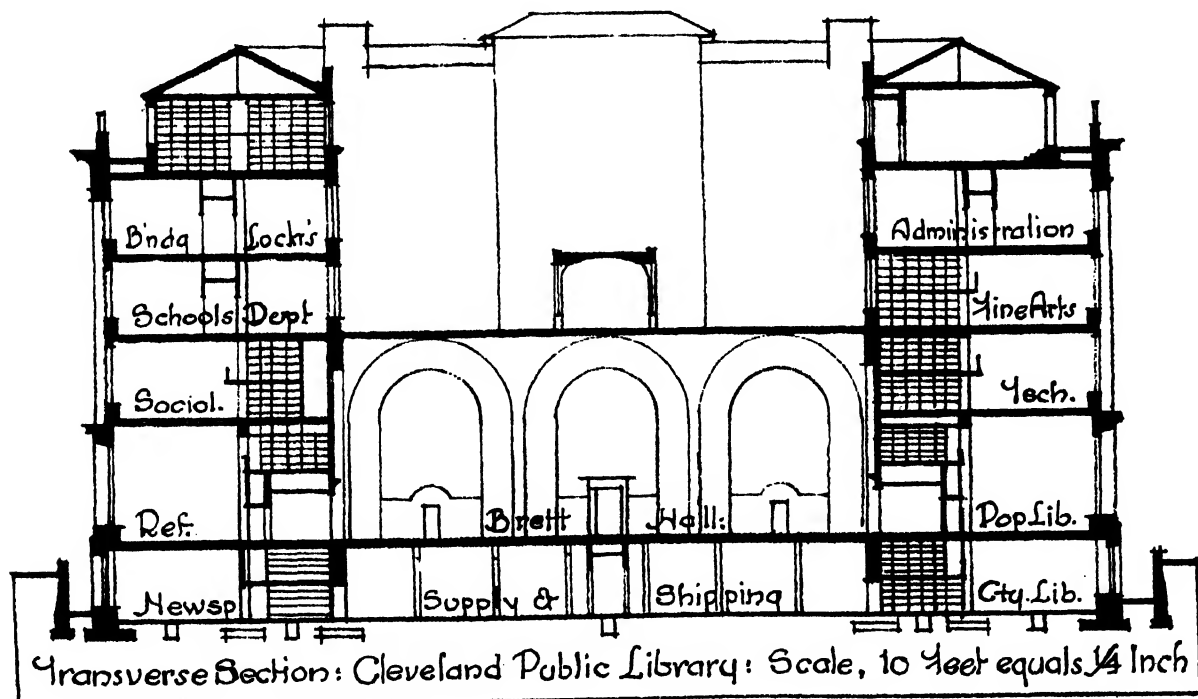
Most of the bookstack is open to readers. Books charged from several points on the three floors, but returned at a common return desk on the main floor to the left of the entrance. To obviate trucking the returned books across reading-room floors, they are sent by elevator to the balcony of the return room, sorted, trucked up a ramp and around the third tier of the main-floor stacks, thence distributed through service elevators or electric book lift.

The plan is commendably simple, the well-lighted reading rooms stretching the length of the huge square, with vast bookstock closely available in two- or three-level stacks flanking each. The hollow square above the main floor brings daylight down to the large reading hall and to the open stacks around it. The plan, developed through several years' study by a group of experienced library specialists, deserves consideration for each detail. Its weakness is the dis-

tribution of major adult reading rooms on three floors, due partly to the use of the most valuable part of the main floor for the secondary purpose of leisure magazine reading and for hallways. Excessive travel is required of a majority of adult readers around the large square on the upper levels. The stack provision cannot be developed evenly in proportion to the comparative needs of the various departments. A central reservoir stack for overflow and miscellany would have been valuable.

We group Cleveland with the Central Stack plans because their problems in arrangement are similar. Preceding plans have a solid stack in the center, Cleveland a hollow stack. The great problem is direct, quick, obvious access to the perimeter of reading rooms and particularly to the rear rooms without detriment to other services. An almost insoluble problem in the hollow square!

NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



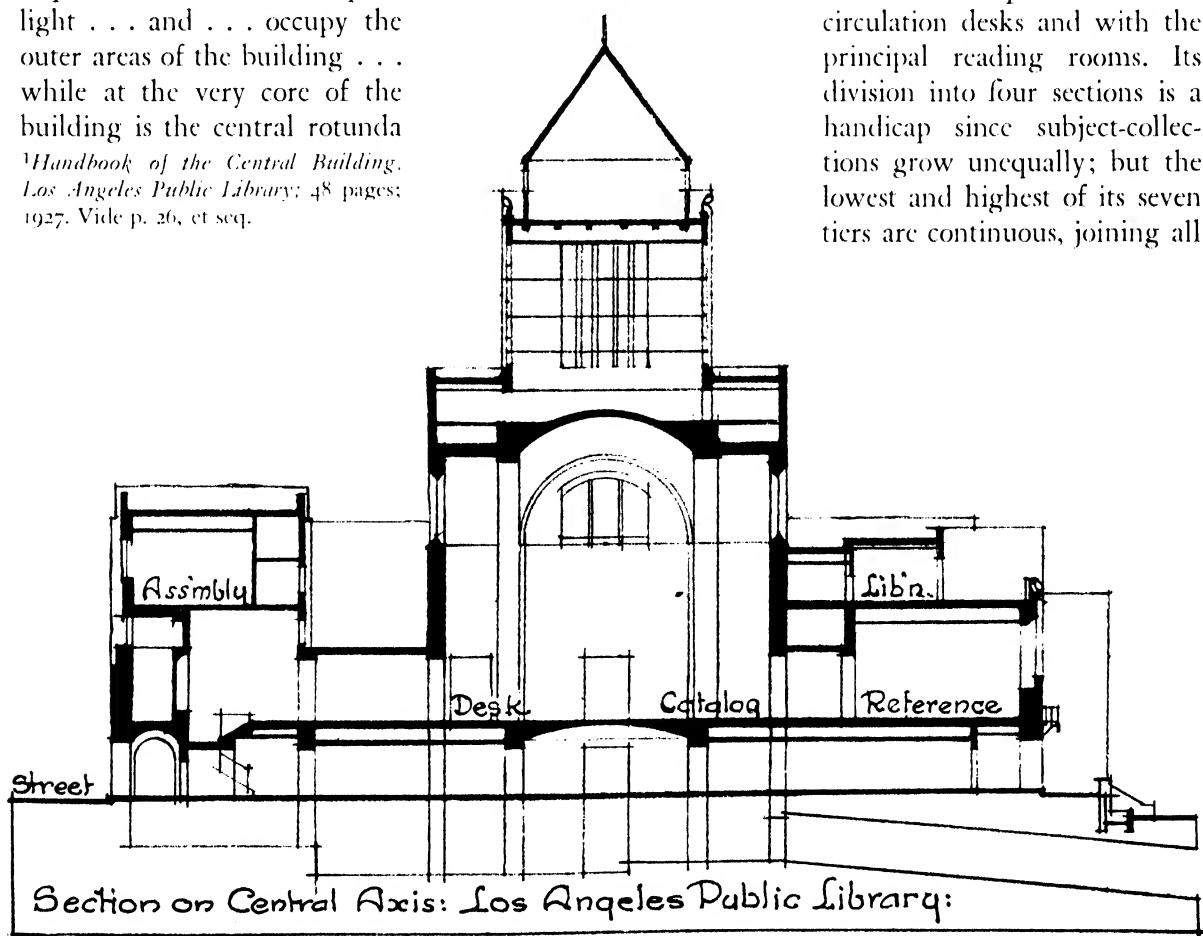
RADIAL DISTRIBUTION: On the first floor at Cleveland one can go straight through to the center of the plan, then right or left to the reading rooms at the sides, though this route is not intended as the principal approach to them. Los Angeles grasped the possibility latent in such a radial distribution and developed it as a corridor system in the form of a cross piercing the central stack. Desks and catalog are where the arms meet at the heart of the building, glorified by a great dome. The light court is discarded; artificial light used for the stacks.

The late librarian, Everett R. Perry,¹ described the theory of arrangement:—"We have decentralized our bookstacks, placing them adjacent and convenient to the departments which they serve, and locating them in an area interior to that occupied by the reading departments which require light . . . and . . . occupy the outer areas of the building . . . while at the very core of the building is the central rotunda

¹*Handbook of the Central Building, Los Angeles Public Library*; 48 pages; 1927. Vide p. 26, et seq.

into which the elevators open and upon which the corridors from the six entrances converge. The central rotunda . . . is your starting place and point of departure for any department you may seek. Here you register as library subscriber, you return your books, you call at the information desk for anything you may wish to know and you find ready to your use the main card catalog in which you learn whether the book you desire is among the library's possessions. With all your preliminary work thus centralized, saving both time and steps, you can now make your way to the department which especially claims your interest. . . . If you wish to withdraw a book from the department you visit, you may have it charged within that department without returning to the rotunda."

The stack connects directly with the work spaces behind the circulation desks and with the principal reading rooms. Its division into four sections is a handicap since subject-collections grow unequally; but the lowest and highest of its seven tiers are continuous, joining all



together and improving matters somewhat.

The many entrances complicate planning and administration. The north entrance on Fifth Street is the most used. Broad stairs lead at once up to the main floor. The approach from the west and south doors is by corridor to the stairs or elevators near the center of the building. Of course the first floor rooms are reached without entering the great domed circulation room.

To provide sufficient reading-room area two floors were required. The choice of the second as the principal floor seems based on three reasons:—

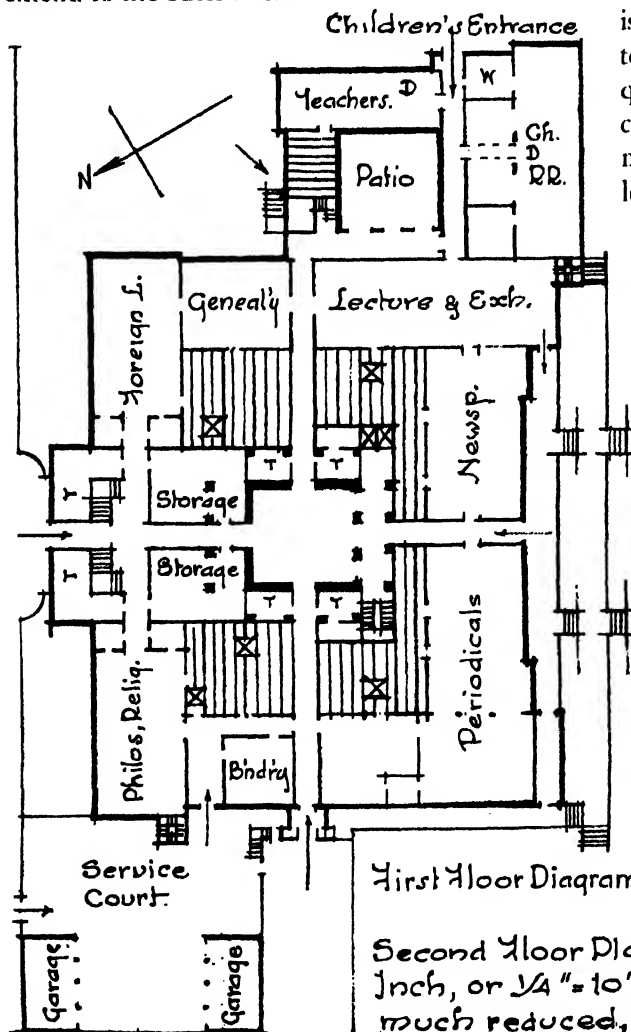
1. The corridors on the first floor must extend to the doorways. On an upper floor they need only extend to the outer rooms.

2. High ceilings were desired for principal reading rooms. If they were on the first floor, the stairs to the upper floor would be long and discouraging, and general use of the elevators by the public was not desired.

3. A magnificent treatment of the central space implies great height. This would disrupt the distribution system of the upper floor.

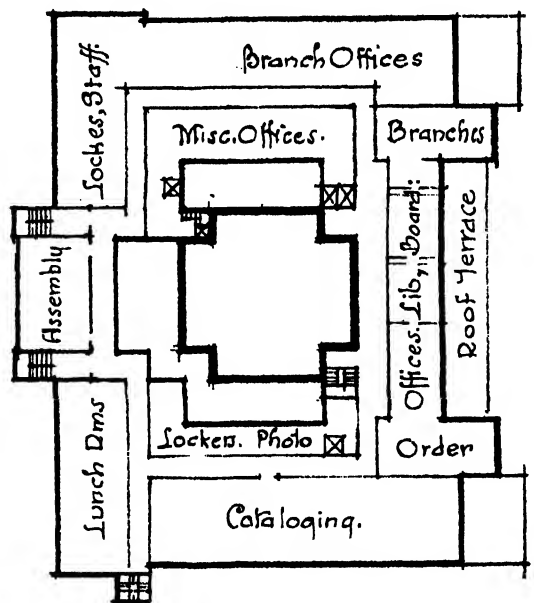
Such is our own interpretation of the reasoning. We do not think it unassailable nor do we agree with its conclusion. Granted radial distribution as a great advance in large center-stack library planning, we are convinced the floor nearest sidewalk level should be the principal floor.

Like Indianapolis and Detroit, Los Angeles is difficult to dissect in this dry manner. Its interesting mass and silhouette, its variety, its exquisite detail are distracting. But we are concerned here only with analysis of plan-parti, and must not permit ourselves to stray into the delectable gardens of architectural romance.



First floor Diagram

Second floor Plan, at regular scale of 40 feet to an inch, or $\frac{1}{4}$ " = 10', on opposite page: These Diagrams much reduced, to scale of about 80 ft. to 1 inch:



Third floor Diagram

CHAPTER 32: THE LARGE CITY LIBRARIES: COMPACT: OPEN PLAN: STACK BENEATH

REALIZATION THAT A bookstack did not need outside light led to the Central Stack Plan and to the Open Plan with stack below the main floor. That the extra effort of bringing up less-used books from stack to readers is insignificant compared to the free, flexible availability of the entire first floor for nearly all purposeful adult readers, is the Apologia of the Open Plan.

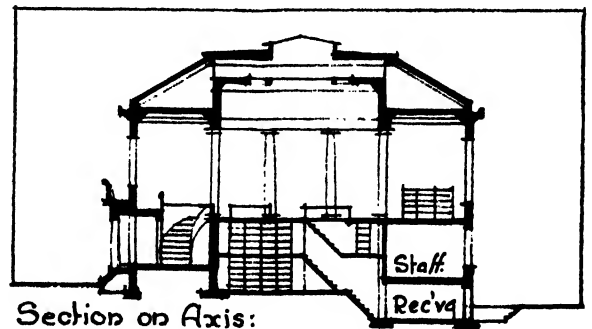
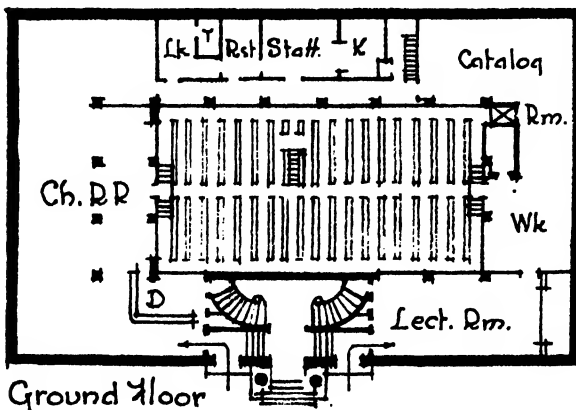
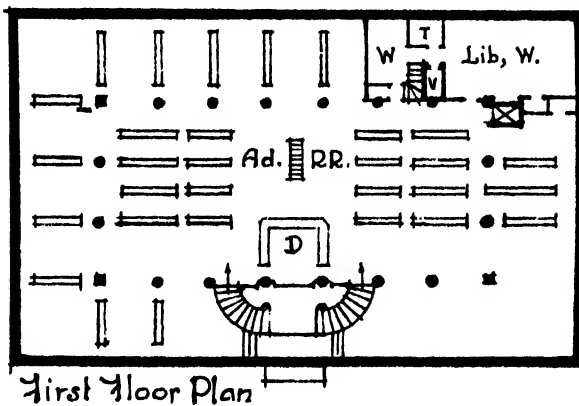
This intensive use of the first floor was stressed in the Carnegie Leaflet (Ch. 23). The New York Library with its great reference room over the bookstack demonstrated that books could quickly be brought up to readers

from below. Shortly after, the first partially developed open plans appeared at Springfield (Mass.) and Manchester (N. H.) where the stack occupied part of the first floor and most of the readers were on the second.

Somerville is the first that can reasonably be called an Open Plan. The interior is cleared of unnecessary pier-masses, domes and other architectural forms. The main floor is not as far above entrance-threshold as its predecessors. It is called first floor on the plans; significant, that. The entrance and stairs are crowded, economy of space carried to extreme. The wide central space with skylight over it appears in all subsequent open plans, though quite altered in character. Basement is nearly all above ground; excellent light, so only the dark center is used for stack; children's room, lecture room and staff rooms surround it.

Edmonton (Alberta, Canada) and the Knight Memorial (Providence, R. I.) are about the same size, built later and more highly developed. All mentioned so far were designed by the late Edward L. Tilton, until recently the sole architect who realized the value of the open plan.

Wilmington and Highland Park (Mich.) brought the first floor nearer street-level and developed the esthetic expression of the Type; Baltimore adapted it to a large city library with



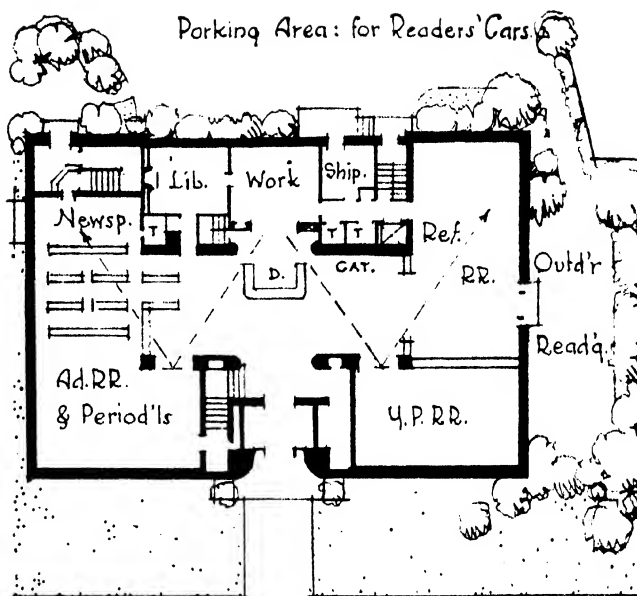
Somerville Public Library Somerville Mass. Edward L. Tilton: Architect :

the introduction of subject-departmentalization; Rochester and Toledo continued the development but added no important new elements of plan-arrangement.

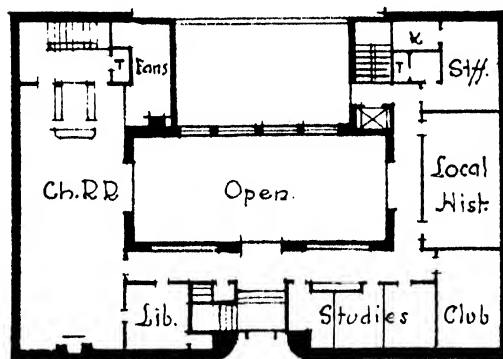
Concord, just finished, has bookstack below reading floor and other characteristics of the open-plan libraries but the whole first-floor area is not given to readers; workrooms and offices absorb part of it. These are concentrated directly behind the desk (compare Detroit branches, Ch. 28). First floor planned to be all supervised from the desk at quiet times; broad tilting mirrors are set over the openings to the recreational reading and high-school reference spaces so the rear corners of the building are under observation. Reference and catalog are grouped to the right, recreational reading to the left. The original intention was to avoid all free-standing bookcases, limiting the accessible books to what the wall-shelving would hold, with titles carefully selected and changed periodically; but a larger bookstock in immediate reach was demanded, with consequent obstruction of sight-lines and loss of seats.

Children are on the second floor, with separate entrance and staircase. Club rooms reached by main stair, staff rooms by service stair; staff elevator to any level; no stairs between the first-floor level and the sidewalk.

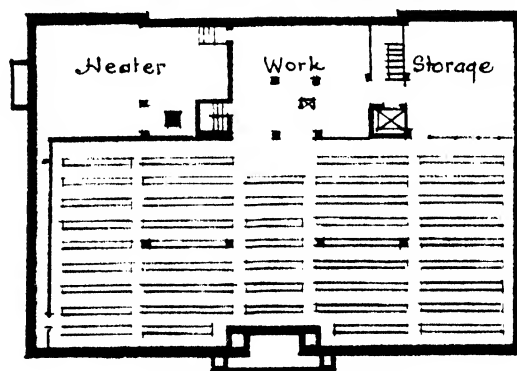
These two libraries show how characteristics of the open plan may be adopted in part and are independent of each other to a certain extent. The stack beneath the reading floor is the most characteristic of them.



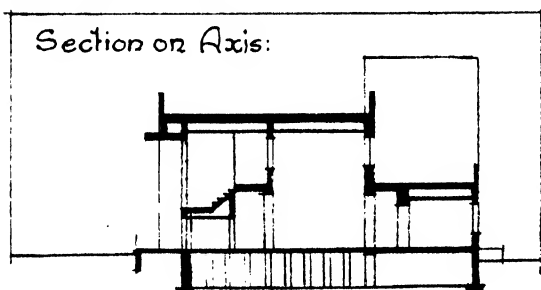
First Floor Plan:



Second Floor Plan



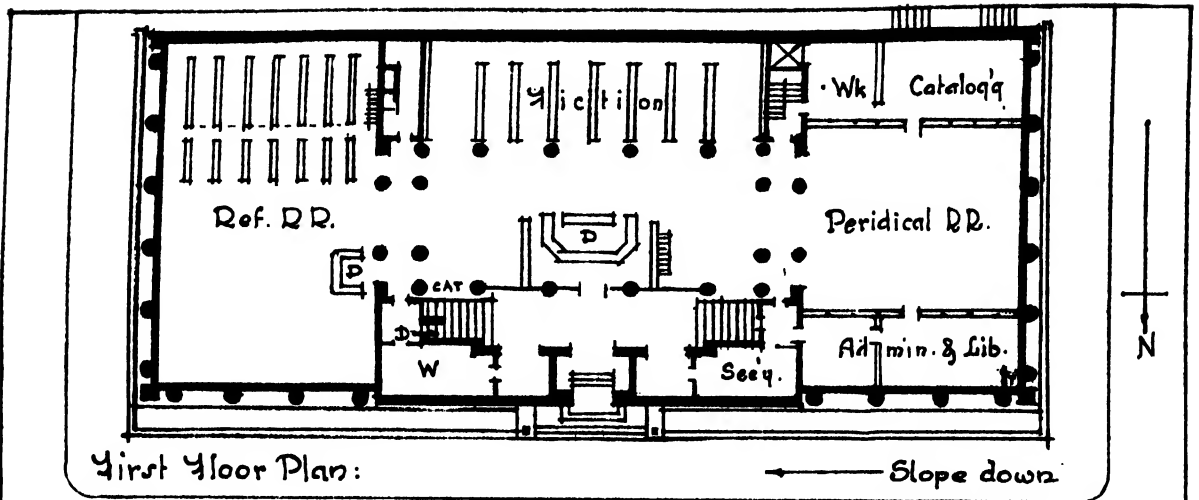
Basement Plan



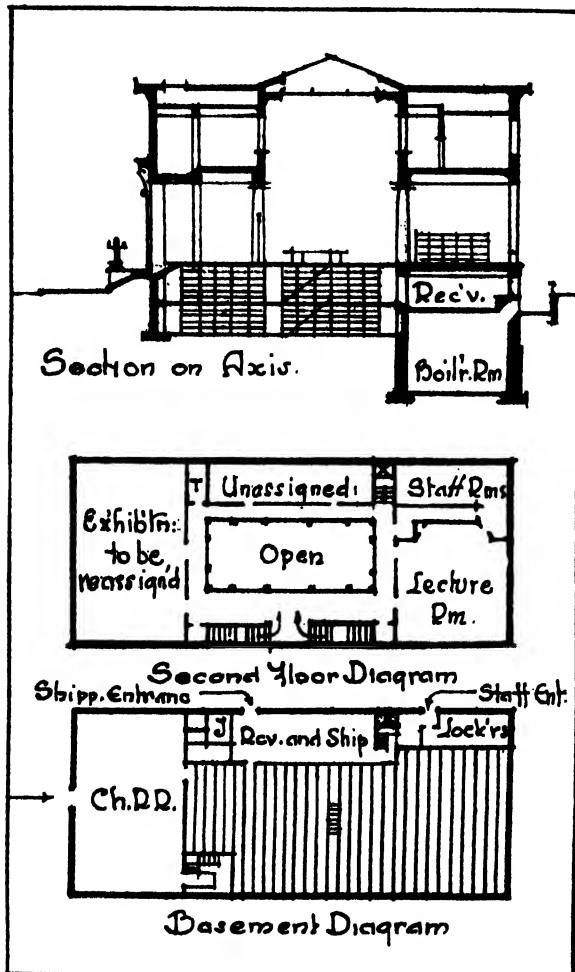
Section on Axis:

Concord Public Library: Concord: N.H. 1940:

A.M. Githens & Y. Keally, Lyford & Magenau: Archts: Pop 27,000: Cost 212,000.



Wilmington Institute Free Library: Wilmington: Del: Pop. 110,000. Cost, 535,000
E. L. Yilton and A. M. Githens: Arch'ts.. 1923:

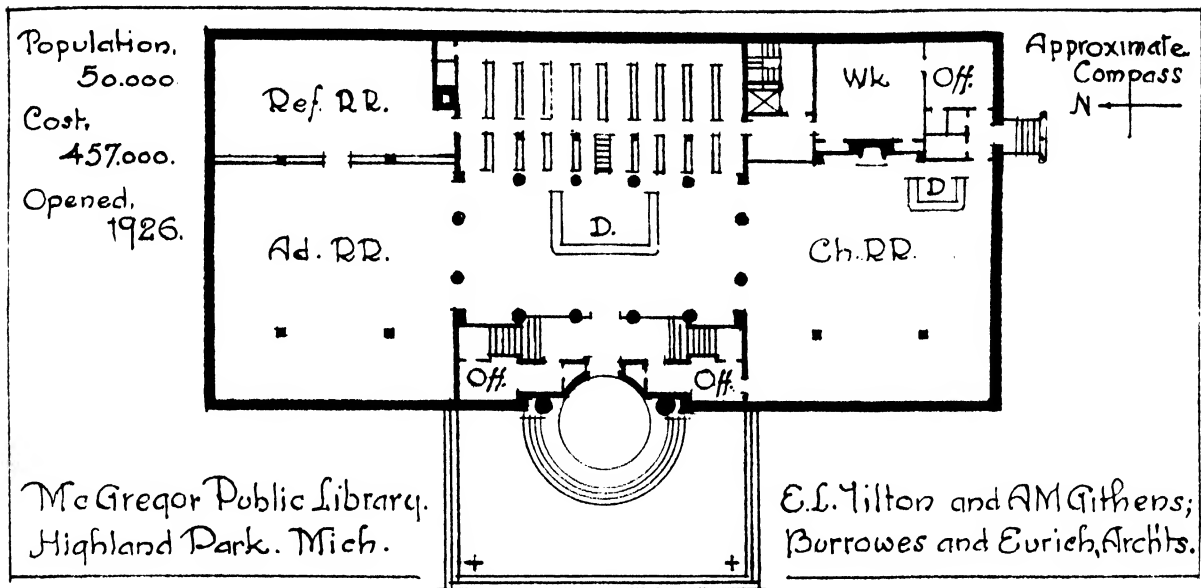


HIGH CENTRAL HALL: At Wilmington the first is the principal library floor. The building faces a terraced city park. The street between them slopes sharply, so entrance steps were inevitable and there was height for a basement children's room above grade on the cross-street to the left.

Center part of the first story lofty, rising through the second story to the glass roof, a double tier of columns around it. Like most later open-plan libraries, the center is generously lighted, and the entire floor area available, and great emphasis is laid on keeping adult book use from the second floor until increased demands require it.

Building designed so that space allocation can be changed if desired, administration and workrooms shifted to second floor and replaced by special-subject reading rooms with new stairs cut through to the stack. Registration, charging and return are at the central desk, separated from the stair hall by a glazed screen; open shelves for fiction opposite; periodicals to the right; general reading, reference, and a great number of books in all non-fiction groups to the left.

The walls between basement stack and adjacent rooms are pierced with openings for cross-

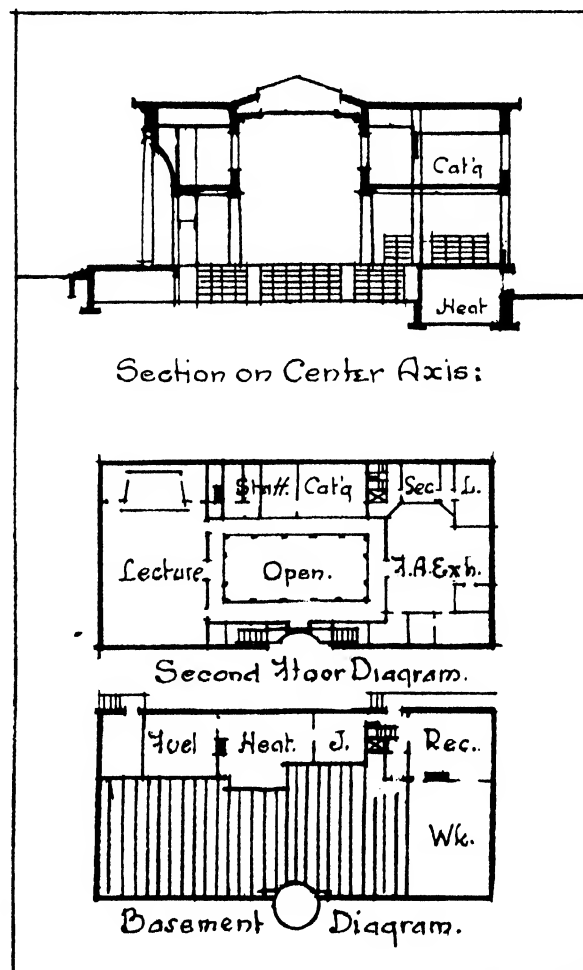


ventilation. A system of forced ventilation of the stack was installed but its use has not proved necessary.

The trustees at Highland Park, Michigan, desired as close a copy of Wilmington as would suit their situation. Less space needed, the city much smaller, terrain level. Therefore the children's room was transferred to the right side of the first floor, all adult reading concentrated on the left, the accessible portion of the book collection massed in the rear center.

Administration and workrooms are concentrated in the right-rear corner on all floors and extended across the rear center on the second story, all connected together by service stairs and elevator. The principal part of the second story is given to community use with a large lecture room, a fine arts gallery and small meeting rooms. The stairways are supervised by the circulation desk through a glazed screen as at Wilmington but their use for other community affairs does not interfere with the library. The building may simultaneously be put to its several uses without disturbance of any by the others.

Openings from second-floor corridor to central hall are glazed, confining the noise of talking, sometimes bothersome at Wilmington. The change in position of the desk proved unwise.



FULL DEVELOPMENT OF THE OPEN PLAN: The Enoch Pratt Free Library at Baltimore adapts the open plan to a larger and more complex organization and introduces at least three elements, subject-division of bookstock, placing the first floor exactly at grade, and the use of exhibit windows. Before first sketch-plans were made a memorandum was written setting forth certain ideals to govern the design. Extracts are quoted; they clearly explain the plan:—

Five fundamental principles for the arrangement of the interior to insure effective service and administration should be retained unless it becomes evident that any one of them is incompatible with the beauty of the building:

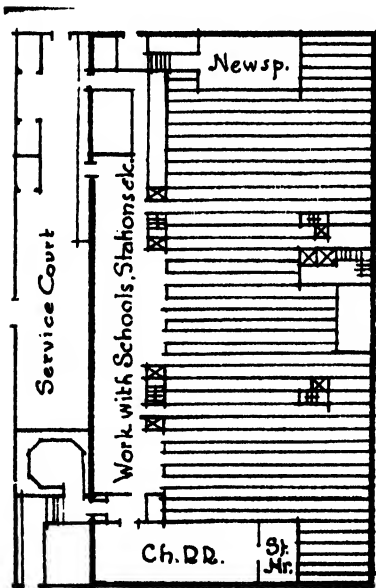
1. The use of the first floor as the main service floor, as in the Cleveland and Wilmington buildings, but with this floor at sidewalk level. The exterior of the building will naturally imply the use of the first floor as this main service floor.
2. The arrangement of the "live" portion of the adult book collection, about 150,000 volumes,¹ on this first floor, both for reading, reference and circulation. This means the complete accommodations for those adult readers who borrow books, or look for information and litera-

ture on any subject. The arrangement of this extensive "live" book collection is to be by general subjects, as in the Cleveland and Los Angeles buildings, forming seven subject departments, plus a general popular reference room (probably at the rear) and a general circulating room (probably near the front). Note, however, that books will be available for lending from all the subject departments.

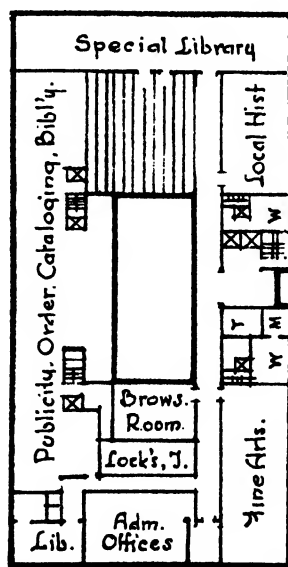
3. The entire first floor, 140 x 300 feet, is to be open to the ceiling, the rooms being set off only by seven-foot bookcases (walls only where necessary).

4. Like the Wilmington building and of great importance to all readers, is the shelving in storage stacks (three levels) immediately below the first floor, of all the less-used bookstock, with several short stairways running down from the corresponding open-shelf public departments above. This and the arrangement of the first floor give: (a) flexibility in the future growth of the public departments; (b) provision for continual transfer of older, less useful books to the stacks, leaving the live material always on open shelves. . . . An important feature which has

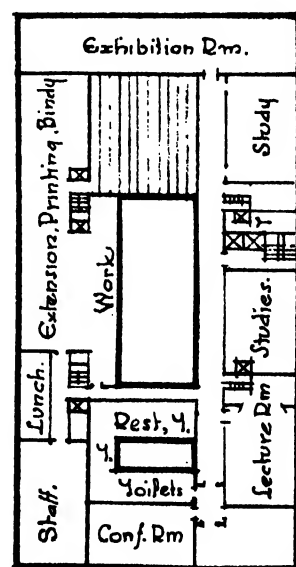
¹Actually 120,000 vols. plus current periodicals, pamphlets and file material.



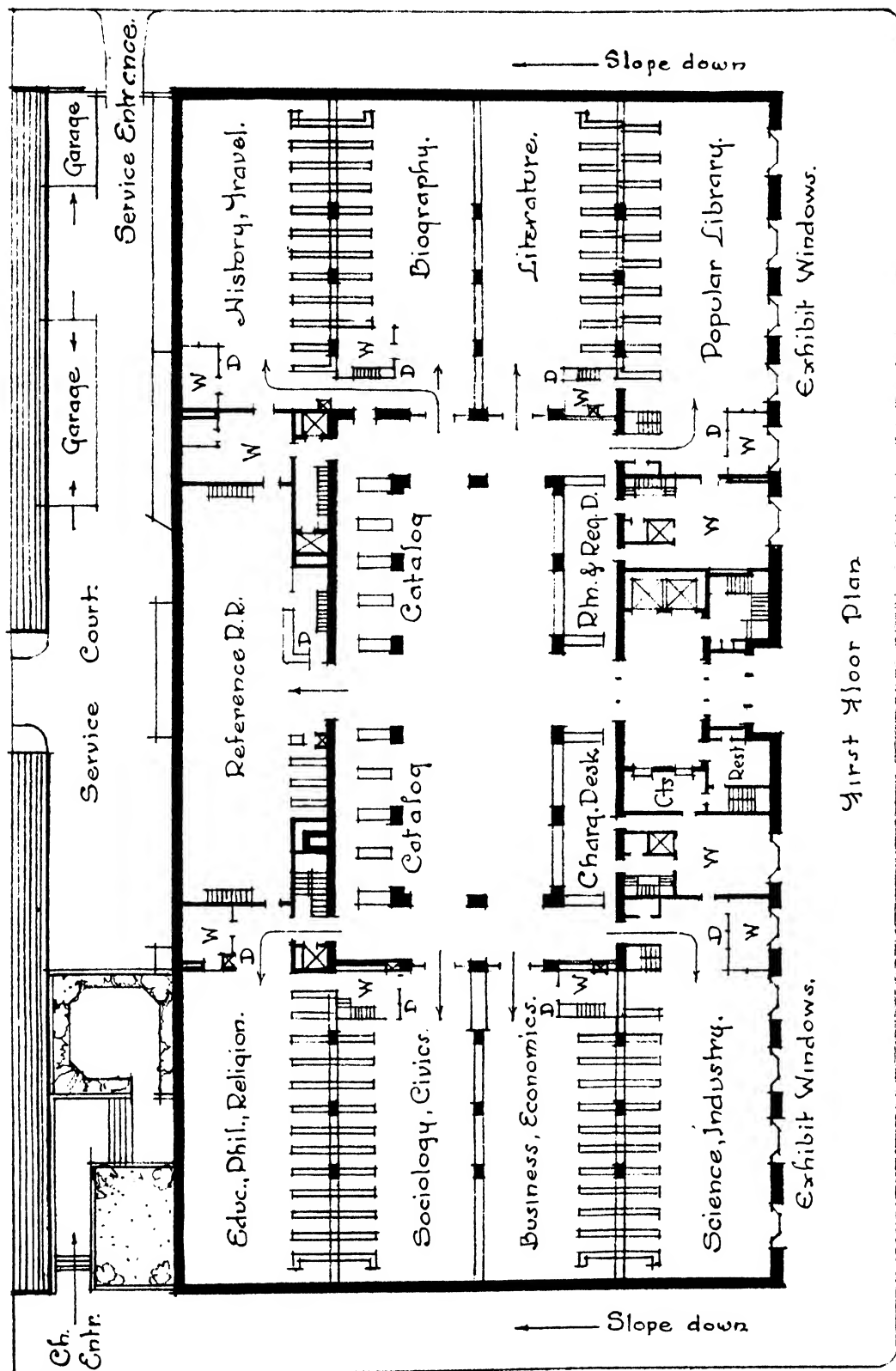
Basement Diagram.



Second Floor Diagram



Third Floor Diagram:



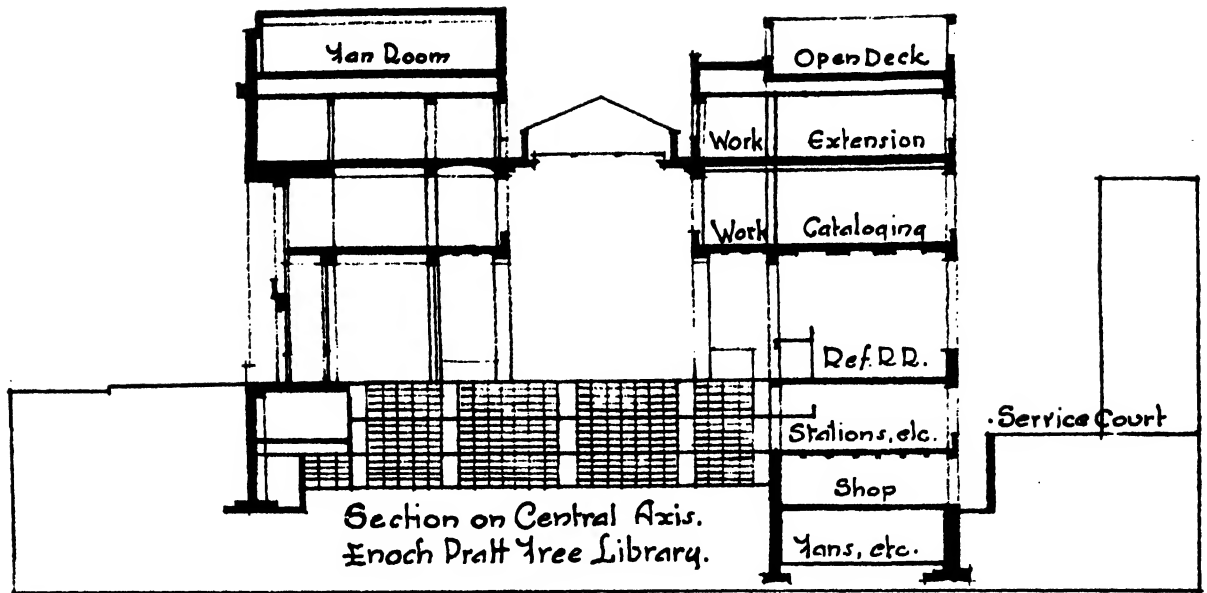
First Floor Plan

Enoch Pratt Free Library Baltimore, Maryland: 1933

Clyde and Nelson Yrig, Architects.

E. L. Hilton and A. M. Githens, Asso. and Consulting Architects.

Population. 820,000
Cost, 2,250,000



worked out so well in Wilmington and is advocated by the Englishman, Stanley Jast, in his booklet, *The Planning of a Great Library*.

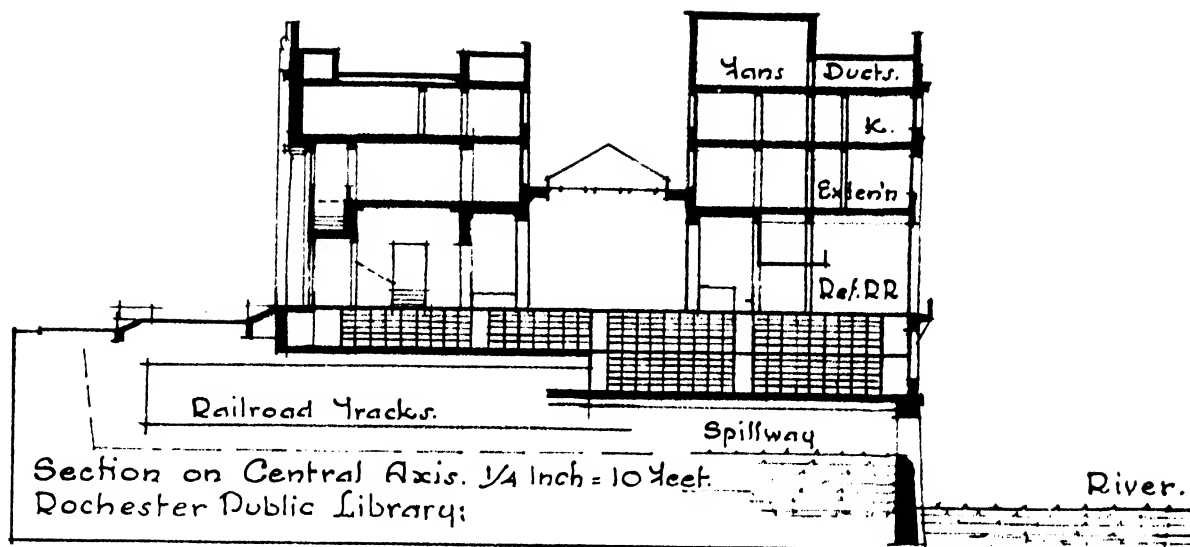
5. With the main floor, the chief service floor, at sidewalk level, in a building whose whole purpose is to give more and better service to more and more citizens, as a great "university for the people," the exterior view must show, through the windows, the actual use of the library in its more usual functions as a perennial exposition and a public demonstration of the part that books may play in the life of all intelligent citizens. We must have broad and low windows flush with the inner edge of the sidewalk. The building must start at the sidewalk line, and the level of the main floor must be only a few inches above the pavement, without a step. The large windows coming down within waist-height of the sidewalk must form a distinctive architectural feature of the façade, with a 25-foot ceiling height that will throw abundant light toward the center of this large first floor.

The effective way in which to make library service an everyday part of the community's life is to design the exterior so that every man as he passes sees with his own eyes how essential it is to his fellows. The library should be "The House by the Side of the Road."

These instructions were carried out exactly. The arrangement of the first floor is "Radio-Concentric," the public entering the center at once with the registration, receiving and charging desk and main catalog around it; then moving radially to the outer circle of reading space. Quoting an article in the *Library Journal*, May 1, 1933:—

"From the administrative viewpoint, one of the important features of the plan is the concentration of the 'traffic'—the coming and going, the use of the catalogs, the charging and return of books, in the central portion of the building. Just outside this, at the entrances of the various departmental rooms is an imaginary 'service circle' which readers pass in making their contacts with the departmental staffs when they ask for books or information on any subject. From here, if they wish to pursue quiet reading, they continue out to the perimeter of the building, securing near the windows as great a degree of quiet and comfort as they wish." See diagram in Ch. 18.

The central hall is carried up through the second story, the openings there glazed. The service desks are divided, each section with work-room behind it. There is no bar to a direct entrance, but an attendant is stationed at the front



door to inspect the books of the 5000 to 8000 persons who use the building each day. There is no other entrance to the first floor. The second story is shared by special collections of books, administration and book-preparation, the third by special study rooms, library school, staff rooms and book repairs. In the basement, children's and newspaper rooms, stations, shipping, etc.

ROCHESTER follows Baltimore closely in first-floor disposition; otherwise it is quite different. Its situation is dramatic, at the edge of the Genesee River yet facing one of the most important streets of the city. Directly under the building is the spillway of a canal, discharging by waterfalls through eleven arches in the river façade, and beside the canal a series of subway tracks. The building is set back from the street line, a broad paved terrace in front. An important street crosses the river at the left, another near by at the right, so it is accessible from either bank. There is a subway station next the building. Altogether a most effective setting, blessed with unobstructed light from all directions yet in the heart of the city.

It is smaller than Baltimore. The ceiling of the central hall is lower, giving direct light instead of borrowed light to the inner rooms of the second floor. Placed well back from the street,

a series of exhibition windows would be useless; two only are retained, one each side of the entrance.

Most of the second floor is used for readers, the third all for the staff. What subject divisions are chosen for the reading rooms of the second floor is important and significant. Obviously those most distinctly separable, most self-sufficient, with least relation to the bulk of the collection and so missed the least in general reference work. These have been chosen: children's department, local history, art (with art gallery and print room), and popular magazine room. The last is informally furnished with armchairs of varied design grouped about small tables, as in a club lounge. There is a similar lounge in a first-story mezzanine for recreational reading by the younger set, approached from the entrance to the fiction room. The children use the main library entrance and follow the second-floor corridor, rather devious and difficult to supervise.

Truck delivery is at the south end of the building, incoming material brought down by elevator or slide to the shipping room; unpacked there and pushed by book truck to the north service elevator and so up to the order room. Crossing the building has not proved an annoyance so the location of the several rooms is amply

vindicated. The south corner has a magnificent view of the river, the north corner excellent working light.

Certain details of first-floor arrangement differ from Baltimore. At the desks, registration is combined with charging, relieving some pressure in the return workroom, which is much too small at Baltimore. This also gives adequate work space for registration and its extensive numerical and alphabetic card files; for charging requires little space. Other changes are insignificant. The pier-masses of the façade are awkward, with no relation to the plan, and they block light where it is needed.

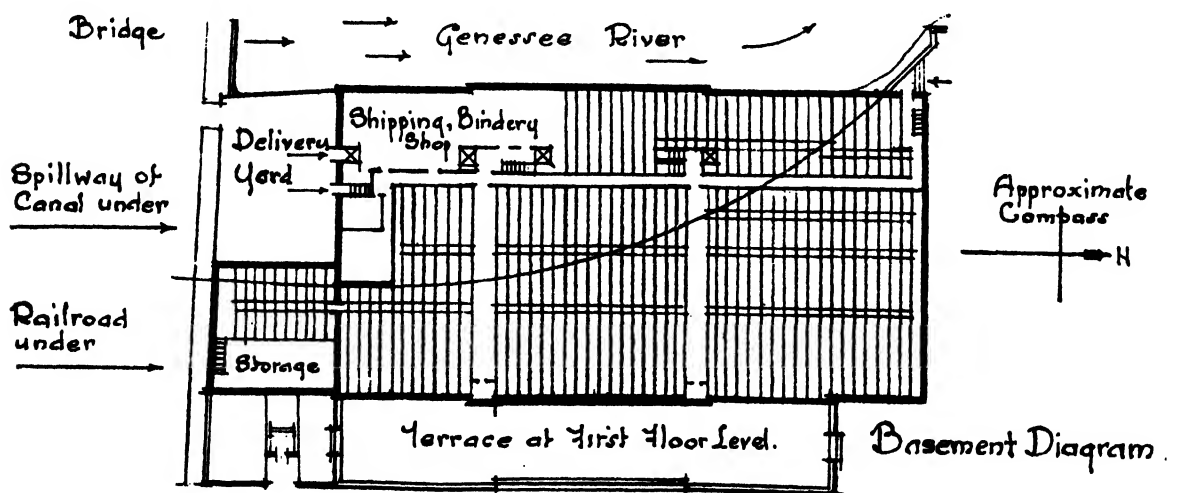
All staff-work is admirably related. Since little use of the basement is possible the extension division is brought up to the second floor, near the children's division. Their work is related since branch material largely consists of children's books. Over it on the third floor are the preparation departments (order, catalog, etc.), the staff rooms and administration. The trustees' room is combined with the librarian's reception room as at Baltimore, a practical arrangement. A saw-tooth skylight facing north

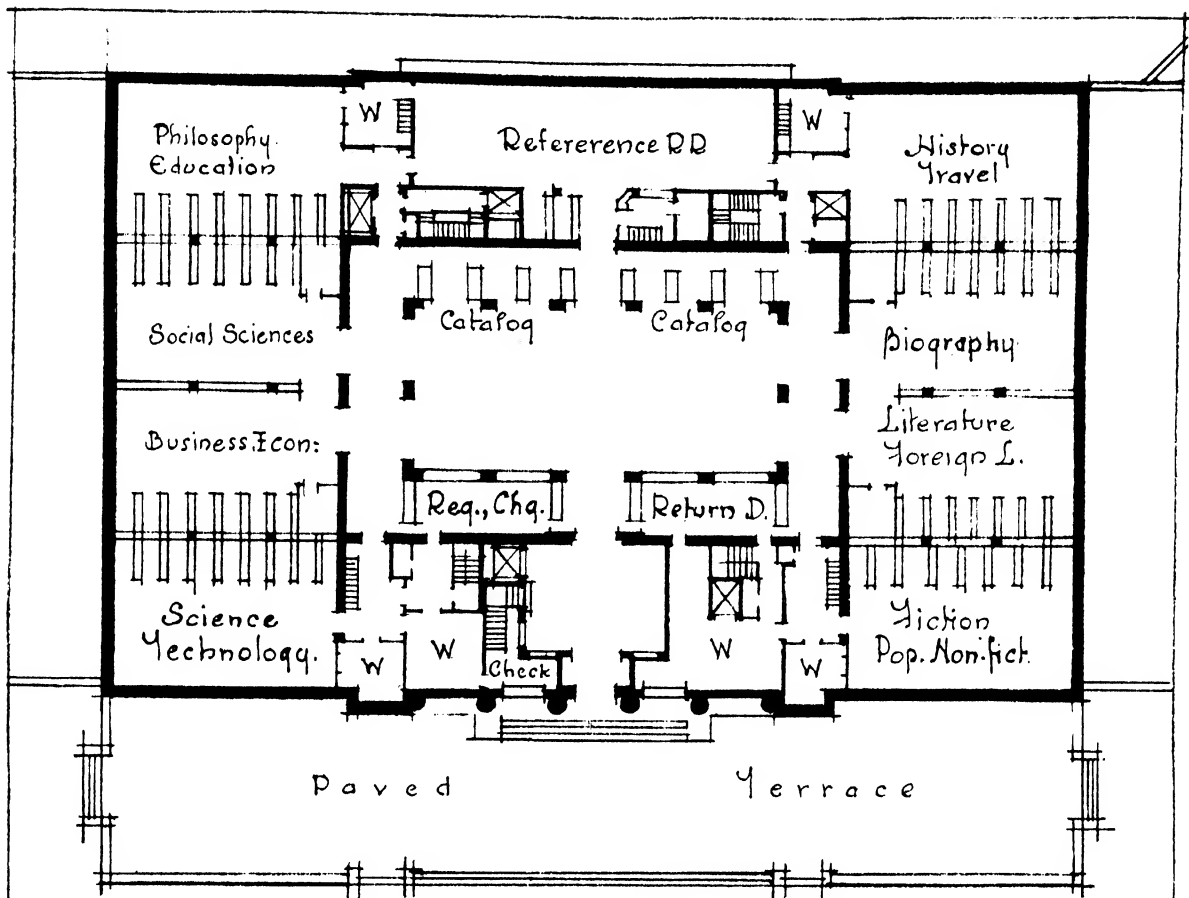
over the catalog room is an excellent innovation. These rooms are all well out of any interference with complete public use of the lower floors.

Rochester has complete air conditioning and acoustic treatment with the use of both acoustic tiles and plasters, an advance over any previous library. Wood wainscot is used effectively; and curtains and hangings, in carefully chosen gay colors, tend to quiet any possible echoes.

The main-floor subject and reference departmentalization of Baltimore is almost exactly duplicated at Rochester, for a population one-third smaller. Principles involved in this are discussed in Ch. 14. After long effort of certain wise officials, the previously independent Reynolds library with its extensive reference collection was incorporated with the Rochester library and given the place of honor at the rear center of the main floor. Other cities which maintain separate reference libraries should find a similar solution for such a problem! Otherwise there is constant and unavoidable duplication of purchases and services, and inescapable confusion and disappointment to all who use books for serious study.

NOTE: Detailed plans and descriptions of many of the buildings in these ten chapters appeared in *The Library Journal* and in architectural magazines within the year following their completion. They can generally be found by consulting *Library Literature*, a cumulative index of articles in various magazines, 1921-32; '33-'35; '36-'39; '39-date. These index volumes are available in most libraries.



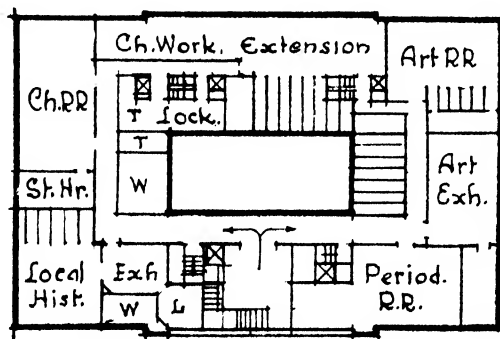


Rochester Public Library: Randel Memorial Building: Rochester, N.Y.

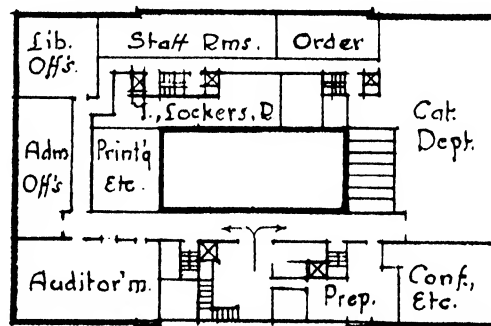
Gordon and Kaelber, Architects:

Leonard A. Waasdorp, Associate:

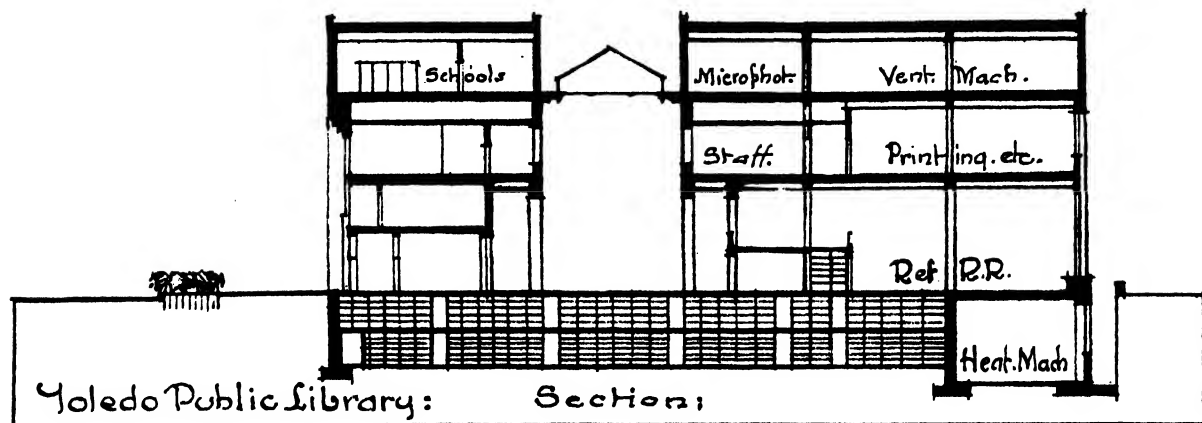
1936. Population. 325,000.



Second floor Diagram.



Third floor Diagram.



EMPHASIS OF THE FIRST FLOOR: Toledo, in a less crowded city, on a more ample site, has achieved the disposition of all general adult reading on the first floor, at sidewalk level as at Baltimore, with a single entrance and no entrance steps. Building extended at the rear, entrance hall compressed, so there is a larger percentage of reading space than in any other first-floor plan. Newspaper room strategically placed in basement with outside entrance. Children's division on the second floor, approached through the main entrance vestibule and up a special stairway at the side. Auditorium and a small local history room here also. The remainder of the second floor is all used for administration, book-preparation and staff rooms. The third is an open unfinished attic, used only for heating and ventilating ducts, mains and machinery. Vertical travel is less than in any other great plan except Pasadena, a provision which has hourly advantages for both public and staff.

Like Detroit and some of the large western libraries, it is in a setting of lawns and planting; traffic noises are lessened and unobstructed light is secure. Ample space at the north end for future extension. Sidewalk in front deflected so there is room for formal clipped shrubbery next the curb, yet pedestrians must pass close to the windows and the doorway.

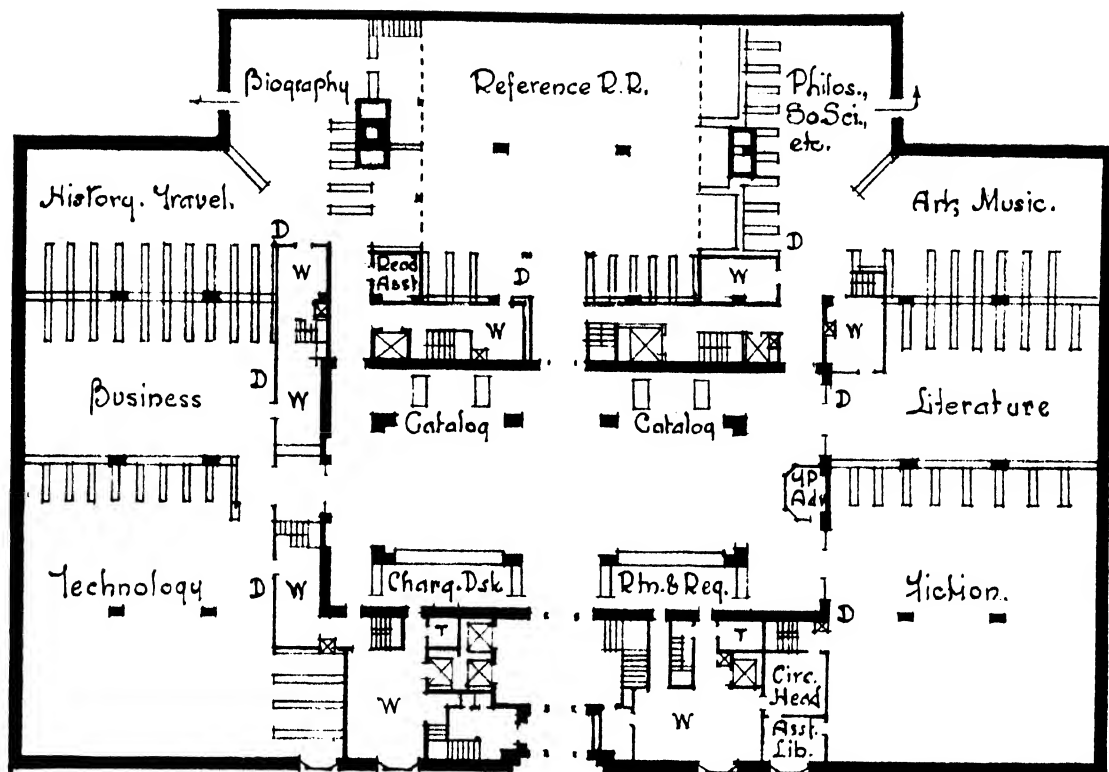
Nothing is permitted to interfere with the tranquillity of the surroundings or the silhouette

against the sky. Service entrance and garages are below ground level, reached by sunken ramp; housing for machinery, tanks, and other structures required at the top of a building are hidden in the attic story.

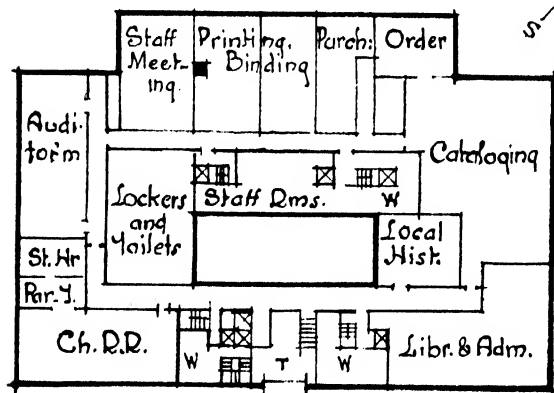
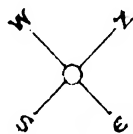
The first floor allocation of departments shows the elasticity of the open plan. There are four structural divisions of equal width at each end, but only three departments, one of them taking up two divisions. The lines of bookcases separating departments can be put almost anywhere. Reference is defined by the two shafts and mezzanine, but it can extend beneath the mezzanine if ever desired. In height of the central hall and in desk-functions, Baltimore is followed, not Rochester. A screened enclosure at the right of the hall is for the supervisor of service to young people. In their reference and reading they mingle with the adults, almost always the case in large city libraries, difficult to avoid in smaller, and definitely preferred by many librarians.

In no other library are the acoustical treatment and the heating and ventilating systems more highly developed. Air is to be completely conditioned, warmed or cooled, and kept in circulation through the daytime. The system is composed of eleven separate units. For night use in winter there is an auxiliary system of concealed radiators, to maintain sufficient heat without the expense of the great blower fans.

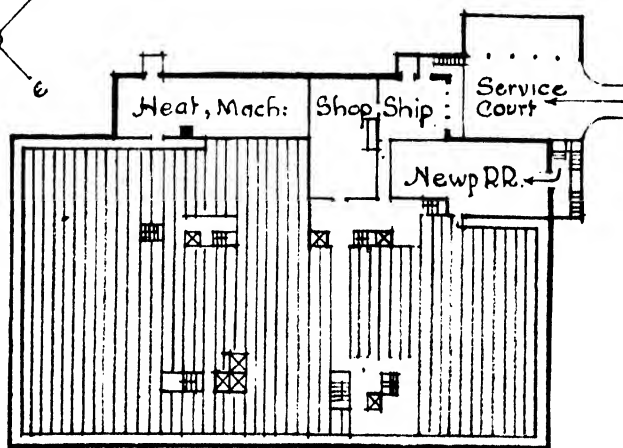
NOTE: All plans at scale of ten feet to one quarter of an inch. Diagrams at various smaller scales.



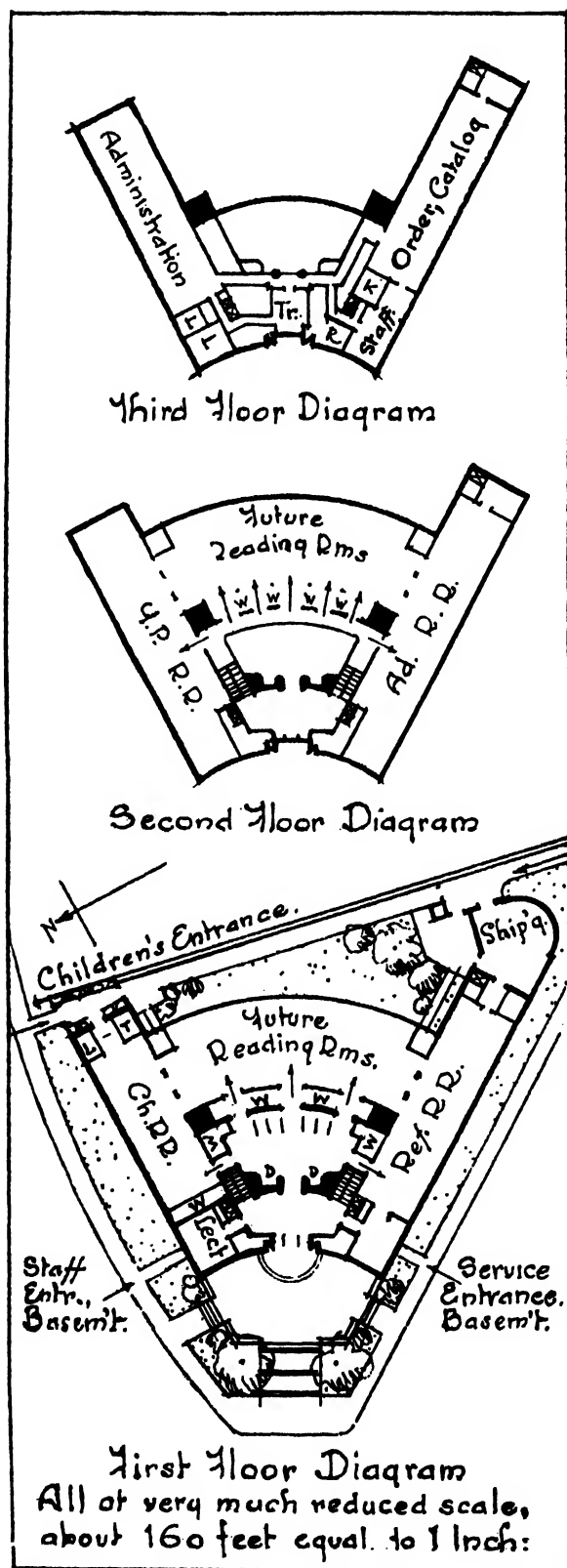
Toledo Public Library: Toledo: Ohio: Hahn and Hayes: Architects:
 Building completed in 1940 Pop, 281,000. Cost, 1,465,000.



Second Floor Diagram



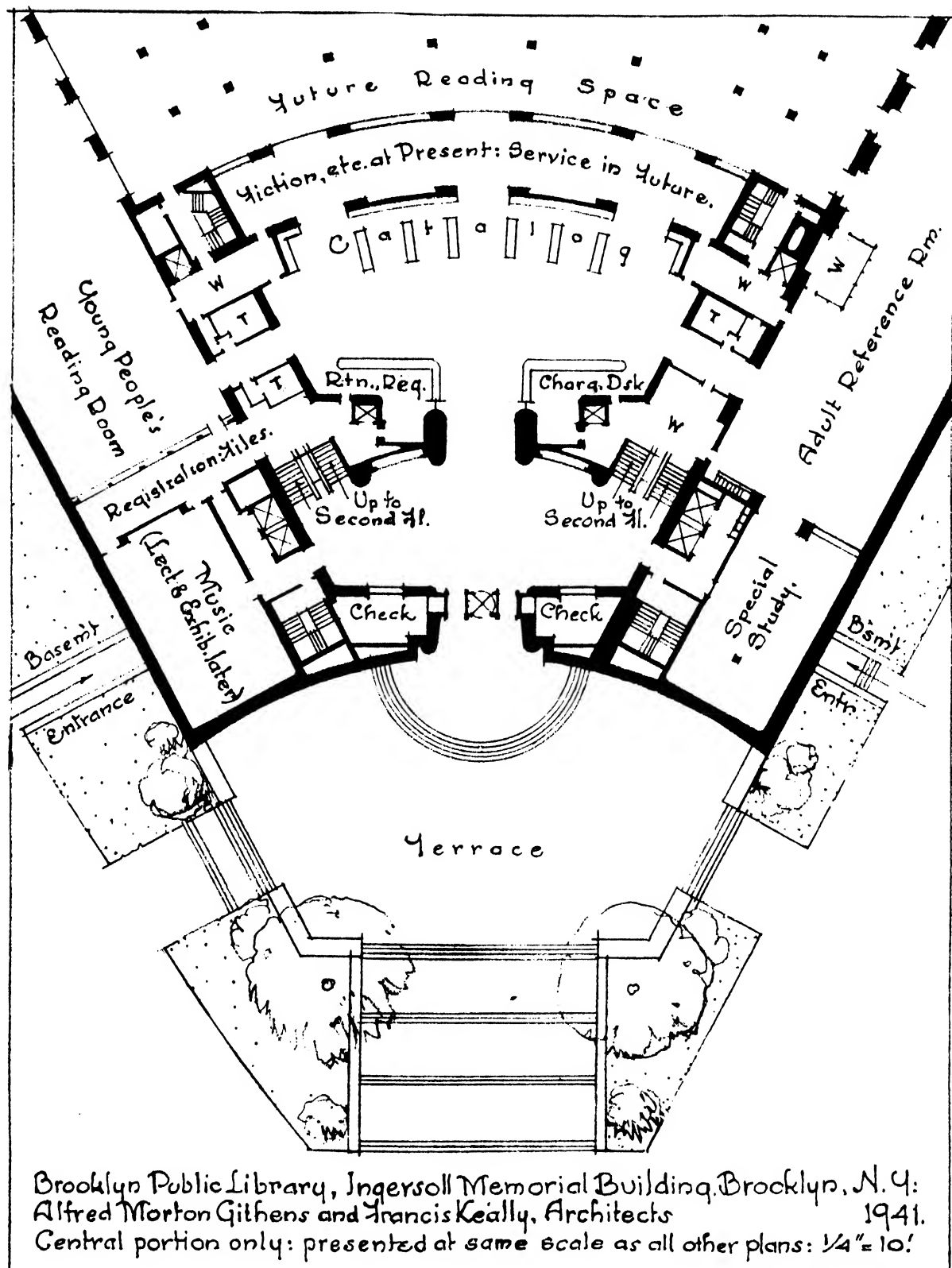
Basement Diagram

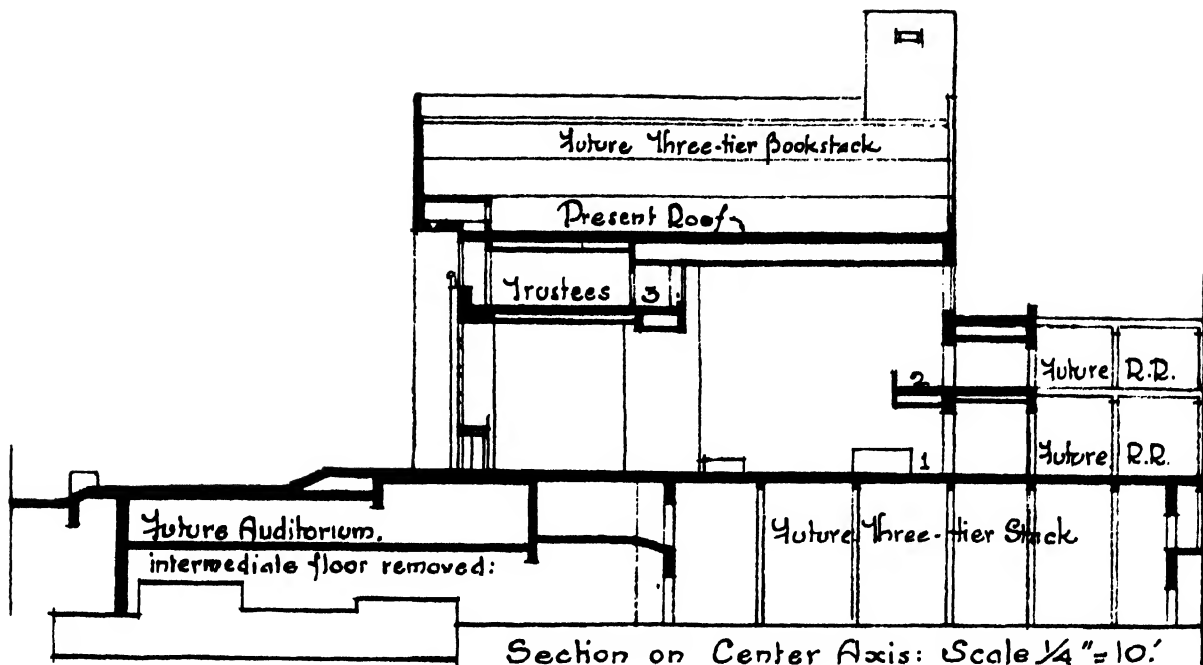


APPLICATION OF THE OPEN PLAN THEORY: Brooklyn Central Library presented a peculiar problem. All the foundations and one wing were built part at a time, from 1907 on, conforming to a type of library plan in vogue at the beginning of the century. For a while the project lapsed. When work was resumed in 1937 the advance in library thought demanded an entirely different plan. This necessitated an ingenious use of the old piers for the foundations of a building little resembling the old design. The existing wing was partially incorporated, its upper story removed, the entire façade torn down except for the structural piers, the spaces between them filled with windows, and the piers covered with a new stone facing conforming to the rest of the new exterior design.

The scale of the building is so vast it is difficult to envision it. The entrance doorway is fifty feet high but looks none too large for its surroundings. It fronts the huge oval Grand Army Plaza with the Memorial Arch and the entrance to Prospect Park. The ground rises toward the rear, there level with the first floor. This and existing floor construction necessitated the terrace and entrance steps. Behind is an old reservoir now converted to a playground, its plateau level with the library's third floor.

The theory of the Open Plan was taken as the basis of the new arrangement. In triangular form with entrance at the apex and long reading rooms at the sides it resembles Fort Worth; but the flow of people is Radial whereas at Fort Worth it is Concentric around the central stack. At Brooklyn the stack is to fill one basement space after another as the need grows, and finally to extend to a space provided for it over the present roof. As in Baltimore, Rochester, and Toledo there is a central hall with circulation desks and catalog around it and five entrances through a "service circle" of the department-staff desks and workrooms to the outside series of reading rooms, those in the center-rear not yet constructed. The second floor has space for a similar series of reading rooms directly over those below, approached from two stair-





halls and connecting balcony over the catalog. The balcony serves as a corridor, yet its space adds to the impressive size of the central room. The middle of each stairway is framed for an escalator, to be installed when the second floor is developed and in full use. Meanwhile the comparative few that use it must go by stair.

Department location will change from time to time as more people use the building and more reading space is added. For the present only the side rooms on the first floor are used for readers, the right for adults and the left for young people who enter from the central hall and children who have their own entrance through a paved garden at the farthest end. A future lecture room now is used for the music collection, reached through the entrance hall. The space for the future rear "service circle" is used for fiction and new books, an arrangement somewhat like Wilmington. In future the entire first floor may possibly be taken for adult use, comprising the departments that most need quick access to the catalog. The invariable difficulties attendant on a library on two floors are bound to occur, unless by that time the func-

tional anatomy of a large library has changed.

The central hall is lofty, extending through the third floor and lighted by a huge curved clerestory of structural glass over the rear reading rooms.

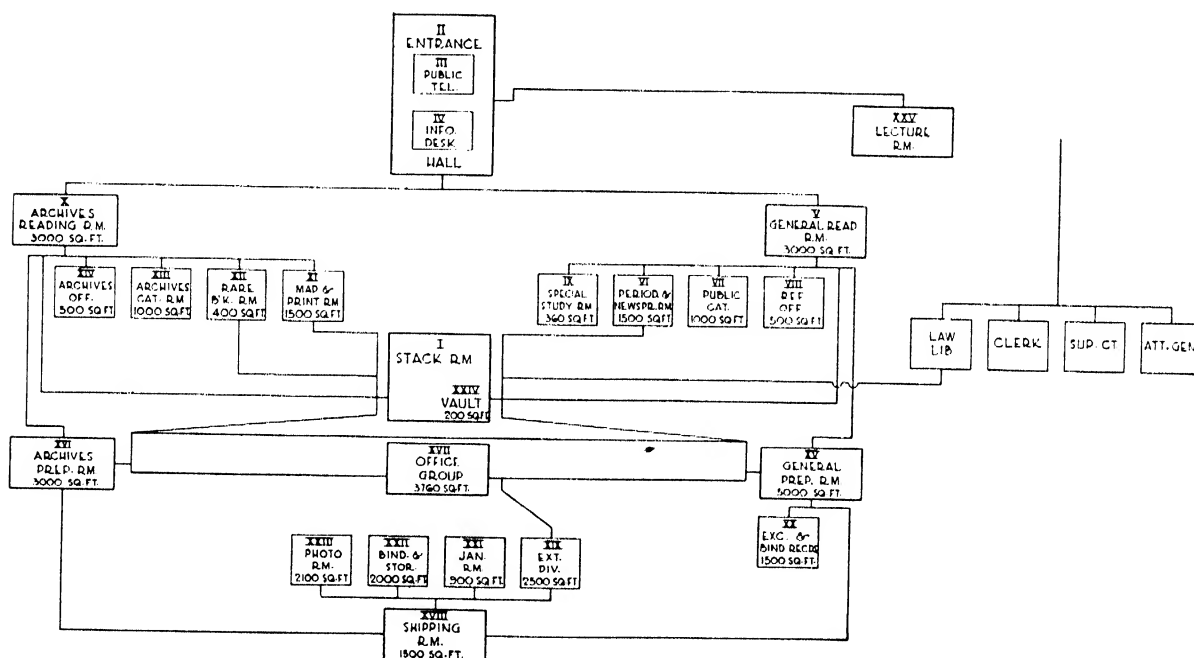
The third floor (except for a treasure room) is entirely for administration, book preparation and the staff. Elevators in five locations connect it with the entrances and the floors below. The trustees' and treasure room are combined, in the center over the entrance doorway, with book-room and vault adjoining. It therefore has the finest position and an outlook over the plaza to lower Brooklyn and Manhattan. At the corners, equal in outlook, are the librarian's office and the staff room. The three are connected by a passage overlooking the circulation hall through plate glass.

Besides the main public entrance and children's entrance there are basement entrances in each wing counting as fire-exits, on the right for supplies to cafeteria, etc., on the left for staff entrance and for those who cannot negotiate steps. A fifth entrance is through the shipping department at the end of the right wing.

CHAPTER 33: ARRANGING THE ELEMENTS IN THE PLAN — A GENERAL SUMMARY

THE PRECEDING ten chapters analyze the plans of post-war libraries. It is now in order to deduce and discuss the factors and principles they demonstrate, so we may use these plans to advantage in designing a new building. Compared with older plans, they show a definite change in library ideals, an increasing respect for these ideals on the part of the architect, and greater latitude due to the recent improvement and confidence in mechanical apparatus. Underlying all this change is the modern standard of efficiency. A building is judged more severely than ever before by its fitness for the work that goes on in it. This is assumed as a self-evident fact; no one now questions it.¹ Formerly this was considered less important than its architectural dignity. But beauty and efficiency are entirely compatible.

Approach to the Problem. The obvious approach to a planning problem is through careful study of the organization to be housed. The organization may be found complex, the interrelation of its parts not easily grasped. We start with the elements, noting the character of each and the *functional relation* of the elements to each other; next, with the *position* of each element so that it may give this functional relationship. Position is effected by site and orientation; functional relation is not. At this stage all matters of shape, balance, beauty, and of course all details, are ignored. Designing in this way, we establish the basis of a plan "that will work." Afterward, the outline of the plan, the form of the rooms, the exterior of the building, and the myriad details connected with it; but first Function, then Position, then Form.



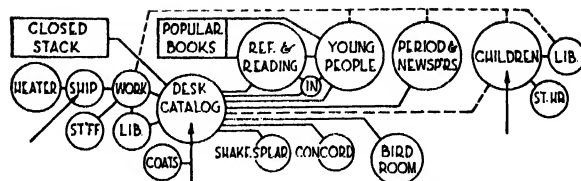
Librarians of the Virginia State Library initiated this diagram to show the architect the functional relation of the various rooms, an unusually complex problem. There was a descriptive schedule or program also, but the groupings and connections of a diagram like this clarify any planning problem.

The Functional Diagram. If the organization is at all complicated we resort to a diagram of some sort. One of the most satisfactory represents each room or space by a circle or rectangle, its area vaguely suggesting the area of the room or space. A line connecting two circles represents the need for direct communication between the rooms or spaces they represent; a dotted line, an essential but not necessarily a direct communication. The diagram as first drawn makes no attempt to place the spaces in the position they are to occupy in the plan; that will come later. They are set down at random; but the connecting lines are important for they show relationship and must unite the proper circles. The librarian can greatly help the architect by making a Functional Diagram of his proposed library. This diagram does not show position; it is not a plan, but only a diagram of relationship or *Function*.

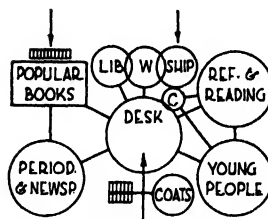
The Arrangement Diagram. Occasionally it is useful to convert the Functional Diagram into an Arrangement Diagram, still preserving the functional character. The connecting lines were long and indirect; they must become short and direct, and this is accomplished by shifting the circles about. "Proximities," in Chs. 13 to 20, state which departments need be closest to which others. As the circles find more reasonable positions, we unconsciously change them to ovals and then to rectangles, and the building begins to take Form. There are generally several good arrangements of the circles, indicating several good solutions of the same plan-problem. Something akin to this double process of diagram making goes on in an architect's mind whether he puts it on paper or not. Such diagrams in practice are intended for no one's eye but his own and are therefore roughly drawn.

Next comes the development of the true *Plan*, a plan not as large as the palm of one's hand perhaps, but with the principal rooms and entrances located.

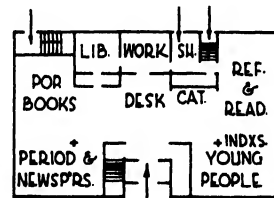
Testing by Routing and Distance. When the plan is at last drawn out roughly it can be tested by marking the principal lines of communica-



Functional Diagram



Arrangement Diagram



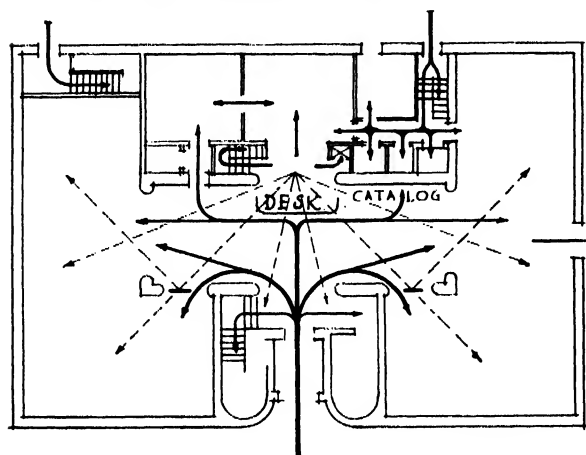
Plan Diagram

The three diagrams of the Concord, N. H., Public Library. The children's room, staff room, and Shakespeare, Concord and bird rooms, as separable elements, were placed on the second floor; the closed stack and heater in the basement; leaving the major elements for adult and high-school students' use, as an unbroken unit on the main floor.

tion on it in red pencil, indicating the routes which adult and juvenile borrowers and reference students take on entering the building, going to the appropriate rooms or service desks and getting their material to read or to take away. Lines will join desk with workroom, workroom with catalog, and so on, to show all frequent traffic; perhaps a secondary series of straight lines in yellow pencil to indicate lines of supervision. Then the strength and weakness in the structure of the plan will appear. Short traffic lines save steps; short, straight and unobstructed sight lines insure good supervision. An obstruction in one of them is a fault in the plan, such as a wall that interferes with sight or direct communication, a stairway to climb, or even a few steps that prevent the use of book trucks. The work that goes on in a library building should be "routed" on the plan, just as it is on a

¹W. F. Yust. "Recent tendencies in the planning and architecture of central library building," *Lib. Jour.* 55:903-7, Nov. 15, 1930; C. B. Roden, "Recent trends in library planning," in *Ill. Soc. of Arch., Monthly Bull.* v. 22:1-2, Feb.-Mar. 1938.

factory plan when studying the proper layout and grouping of the machines. Perhaps a perfect plan is impossible; but one that gives fairly complete oversight from the desk, with lines of communication direct, short and unobstructed; and at the same time is acceptable according to general architectural standards,—such a plan will rank high among libraries.



Sketch-plan of Concord Public Library, with principal routes of public and staff marked in heavy lines and supervision in dotted lines. Note that mirrors over two doorways deflect the lines of supervision to the rear corners.

Control. The principal elements of a library organization group themselves about as few centers of control as possible, to secure economical administration. The main charging desk is one; if there is a second it is usually the children's desk; if a third, probably the reference desk. The larger the library the more centers there are, each a little organization of its own.

TYPES OF PLAN-ARRANGEMENT

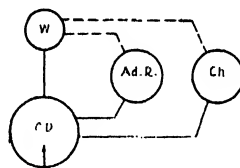
Recent libraries, as the preceding ten chapters show, seem to represent a series of fairly definite types of room arrangement. These have been repeatedly used, are still in favor, and are the best solutions so far developed of the present public library problem. Each has its own particular virtue and is excellent in its proper setting; though in a different setting, it might be faulty. The shape and surroundings of the plot determine which is best.

Some buildings closely follow one of these types, others have characteristics of several. The fact that a library has a certain type of plan is not a restriction on its architectural expression; rooms can be added, outline and treatment varied at will. From these established types others can be developed; they are starting points for the architect, not models for future library design.

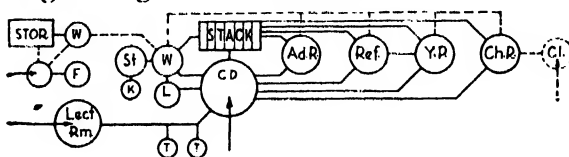
We will review them briefly, in a sequence somewhat different from the preceding chapters.

PLANS WITH CONTROL FROM A SINGLE CIRCULATION DESK

The smaller libraries, Chs. 23 to 26, have at least two reading spaces, for adults and children. Desk so situated that at quiet periods of the day a single member of the staff can if necessary supervise the entire floor. Circulation space the first to be entered. Desk must supervise doorway and everyone coming in or going out; also, as far as possible, all reading spaces and the bookstack if there is one. Bookstack almost always open to the public. Catalog must be near desk and accessible to readers, to adults doing reference work and particularly to students. Workroom should be convenient to desk and catalog, and not too remote from the bulk of the books.



These two functional diagrams show the range in complexity between the smallest and largest Single Control libraries.

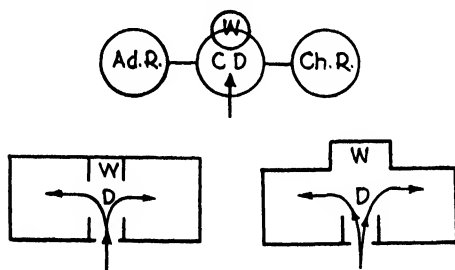


In the larger libraries is a librarian's room, best near the workroom and accessible to the public. The readers may be separated into their four natural groups, adult recreational readers, adult reference readers, young people (principally reference) and children.

A staff room with perhaps a kitchenette may be on main floor, mezzanine, or basement. Many

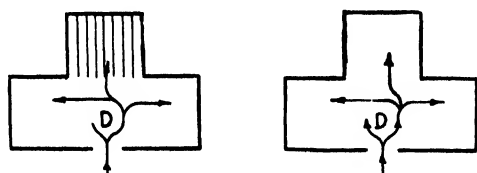
recent small libraries, particularly in the southwest, add a small room for meetings and activities related to the library. It generally connects with the children's reading room, and is used for story-hours. It may have an outside entrance for use when the library is closed, and no attempt is made to oversee it from the desk. It is doubtful whether main floor space should be used for it. Carnegie plans have a basement lecture room that may be used for children's story-hour; many of them have the staff rooms in the basement; some of them a basement workroom for book repair. Here are furnace and storage rooms. Among minor elements, there is wide difference of opinion concerning the position of toilets, for they must be under control. Sometimes placed each side of vestibule, sometimes in basement, one of them often next the staff room.

Right-Left Plan. This is the village or branch library in its simplest form; efficient, economical, an embryo which usually expands into the Sexpartite Plan. Great variety of possible treatment,



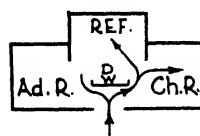
from an exact balance to a picturesque irregularity. Can be extended later at ends or rear.

Trefoil Plan. Evolves from the preceding by the extension of the rear-center as a third reading room or open-stack room. Few examples; a weak plan in most situations. Position of the



two unused corner spaces renders them useless for any architectural development; they could be included in the building as useful floor space without increasing the length of exterior wall

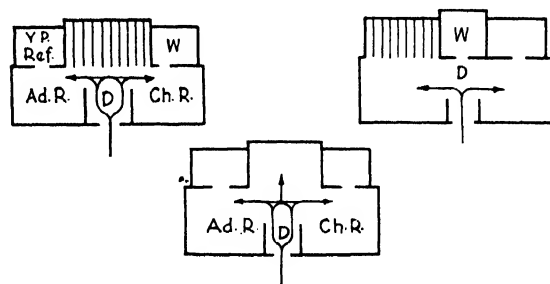
(cf. Sexpartite Plan). Only advantage is the abundant window space along three sides of each foil. Special site conditions, e.g., a high building at rear, would justify the trefoil. If rear foil does not project far, and there is a combined workroom and reversed desk, the type may be



developed into an effective plan, as at the Bridgeport and Providence branches. Sufficient work space is difficult to arrange; may be obtained

within a large desk, or, in case of a reversed desk, by an enclosed space between desk and vestibule wall; or by a room tucked in one of the rear corners like an incipient Sexpartite Plan.

Sexpartite Plan. Compact, efficient, economical. Approaching a square in outline, it has the greatest floor space for the least outside wall. Many examples of it. Large floor area around the desk so that more of the important elements can be brought close to it than in any other type. Central location of entrance and desk space exacts triple division of the front portion, and generally allows the rear portion to divide in three parts also.



Rear spaces variously assigned. The important central position may be allocated to open stack, workroom, or a third reading room.

If open stack is in center it is convenient to the desk for getting reference material, for assisting borrowers to find their books, and for general oversight. Movement of persons selecting books does not disturb readers at their tables. Corner next adults' reading room usually becomes a reference room or young people's room; corner next children's room becomes the workroom.

If workroom is in center-rear, with forward-facing desk directly in front, the two form a compact unit, save steps for the staff, and permit slipping and similar book-work in private. Public passage across the building should be in front of desk, preventing the use of flanking guard rails. If these are desired, desk must be moved toward the front, either facing forward or reversed, with public passage across the building behind it, breaking direct contact between it and workroom. Rear corners of building are available for open stack, reference room, young people's room, or the combined story-hour and club room.

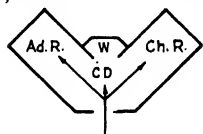
If a third reading room is in center-rear, it is under close supervision of the desk, but since this position is usually considered more important for either stack or workroom, there are few examples of it. This is a form of the Trefoil.

The Sexpartite Plan permits other assignments of space and great variation of proportion, outline, and architectural treatment, as the previous chapters show. There should be a minimum of fixed partition, so spaces can be altered or reassigned from time to time. Mezzanines over rear portion can be used to advantage for additional stack room, work space or staff rooms; or rear portion can have a lower roof than the front, with clerestory windows above it.

*Salient and Reentrant V's.*¹ These are essentially Right-Left plans with wings bent backward or forward; particularly suited to a corner plot where equally important streets intersect. Plan is usually constructed around a diagonal axis which bisects the corner where the streets join.

Salient V has entrance close to the street; space between the wings open and available for garden or for reading in the open air, or enclosed and used for bookstack or additional reading space, with, in either case, a natural supervision from the desk.

Reentrant V shelters a very interesting fore-

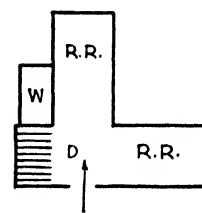


¹Sometimes called, "Butterfly Plans"; but originally this term was used for the Trefoil, so we avoid it.

court between the wings, with possibilities of effective architectural treatment and planting.

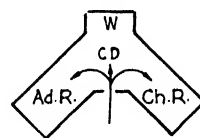
The virtue of these plans is in their imaginative character and the possibility of unusual and graceful design; but they require ingenuity and skill for details of form and arrangement, location of subsidiary rooms, and avoidance of unpleasant shapes and waste space. Exterior particularly difficult if building is small, for there is danger of awkward relations between center and wings, and between height and breadth. Compared to the Sexpartite there is much exterior wall for the amount of floor space, excellent for lighting, yet greatly increasing costs.

The L Plan. Resembles the letter L in shape; entirely different from either of the V plans in composition, for there is no diagonal axis. Main entrance and desk normally lie on the two axes of the wings. An old composition, recognized in the schools, yet recent as a library plan and full of promise. Not applicable to a very small building; not so economical in first cost or heating

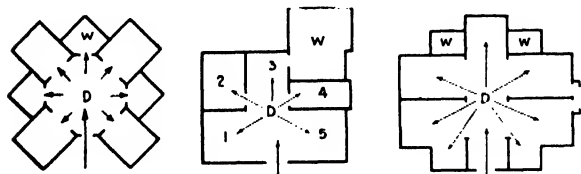


cost as the plain square or rectangle; but with picturesque grace, informality, and balance; escapes the commonplace. Like the Salient V, the two wings may shelter a garden or outdoor reading room. Desk, at axis of front wing, is convenient and controls both reading rooms, the stack if there is one, and the entrance; yet does not confront anyone upon entering nor thrust itself into notice. Open stack usually placed behind desk, though it may flank the adults' reading room as in the modified L plan at York. Work, librarian and staff behind desk unless position of stack prevents; in any case, near it.

The Wheel. A librarian's dream is that the perfect library plan resembles a wheel with the desk as the hub and all reading spaces radiating from it. Diagrammatically perfect, actually defective; for central room becomes inordinately



large, and the reading rooms crowd together, interfering with each other's light. The result can be obtained without these disadvantages by the use of rectangular forms, as is so well done at

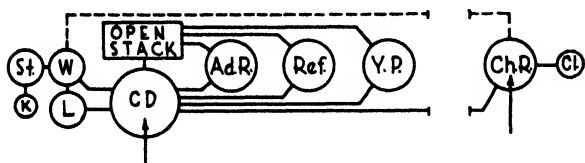


Highland Park, Ill., with five spaces controlled from one desk; or at Ponca City with seven.

PLANS WITH A SEPARATE CONTROL OF THE CHILDREN'S ROOM

Ordinarily one center of control is better than two, so at quiet periods in the day one staff member can supervise all the public present; but this may be impracticable. The library may be too large; a range of fifty or sixty feet is as much as can be controlled from a single center no matter how well the building is planned. For economy in first cost and upkeep it may be wise to assign portions of two floors to the public, or sufficient maintenance funds may be assured to permit two or more staff groups at all times, each specialized in its own particular field.

A study of the last functional diagram shows comparatively few lines connecting the children's room with the other circles. Children do not need the main catalog nor any books but their own, and staff members assigned to them are somewhat specialized; so when division begins they are the first to be separated. There is little common to the two groups except the rooms used by the staff. The functional diagram becomes:



The type of plan composition characteristic of the single-control library applies, with the chil-

dren's room appended wherever convenient on the same floor, perhaps balanced with another group of rooms (Wellsville); or else put on the basement floor below; or the second floor above; all this without effect on the plan composition and its relative strength and weakness as heretofore described. The pros and cons of the different floor levels for children's rooms are:

Main Floor: *Pro* — Ease of Access, no stair climbing

Possibility of supervising the children at quiet periods from the adult desk

Con— High first cost and heating costs

May absorb space essential for adults

Basement: *Pro* — Least first cost and heating costs

Con— Stairs (but not considered serious for children)

Depressing, possibly suggesting dampness

Temptation to raise main floor level too high

Second Floor: *Pro* — Reasonable economy in first cost

Compactness, hence economy in heating and upkeep
Airy, bright, healthful

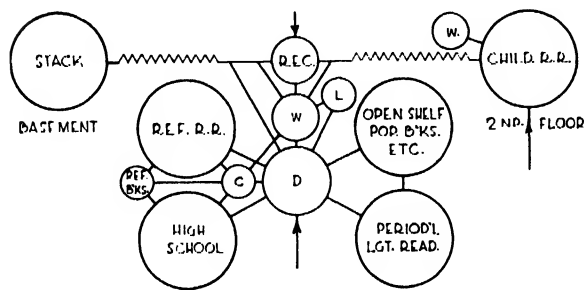
Free from annoyance by children outside

Con— Long stairs encouraging disorder

The series of plans in Ch. 27 show that the basement location is avoided unless the natural slope of the ground raises its floor above or close to the grade (Winchester; Bloomfield, an exception), that the main floor is often chosen when there is plenty of ground (Highland Park, Ill., Amherst, Wellsville), and that the second floor is chosen for their branches by the larger cities of the East, and coming more into favor for the smaller city libraries (Berkeley, Concord).

Usually there is a separate children's entrance, because:

- Children do not mix well with adults.
- Are noisy and make for confusion.
- When they come, they come in droves.
- So need space to form in line before desk.
- Clutter entrance with bicycles and roller-skates.
- Injure any planting about the doorway.
- Their opening and closing hours are different from adults'.



A few branch libraries with children on the second floor have a single entrance for both adults and children, either because frontage on a narrow plot must be conserved for all window space possible (Fordham Br.) or so that the children, as they enter, can be supervised from the main desk (Berkeley, Monteith Br.). Their own desk is on the floor above. This added control may be offset by the advantages of the separate entrance, which other libraries in similar case consider more important (Concord, Hunts Point Br., Runnymede Br., Washington Branches). Note separate children's entrance of Hild Br., which has been closed for lack of control.

The ideal solution might be to place the main public-service desk where it could oversee the children as they enter, as well as supervise the adults. A few one-floor libraries have both adult and juvenile desks; yet in quiet hours the children's desk and entrance are not used and all the library is supervised and served by the main desk (compare West Toledo Br.; Redwood City).

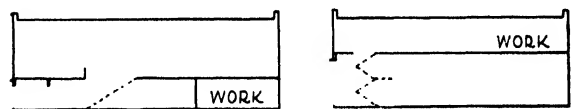
LARGER LIBRARIES OF TWO OR MORE STORIES

When a library's size warrants a splitting-up of its activities into two or more floors, the ma-

jor problem is the selection of those departments which may go on the upper floors with least inconvenience to the public and without scattering related parts of the book collection. This is discussed later in this chapter. Naturally the plan arrangement becomes much more difficult with each additional floor.

The Second Floor Fallacy. Placing the principal adult departments on the second floor is decidedly bad practice, for there is no gain sufficient to justify forcing throngs of readers to climb a stairway. Although many cities of 150,000 have utilized second-floor space to good advantage for secondary purposes, only a half dozen postwar buildings have placed major activities on the second floor, and everyone of these is inconvenient to use.

This method is followed on the theory that a larger area is available here than on the first floor at entrance level, that the second floor is remote from street noises, and that the first floor



can be utilized for other purposes, e.g., children, newspaper room, and an auditorium. Houston has its return desk on first floor; Bridgeport and Birmingham have the young people's room on first floor, thereby requiring a duplication of much adult reference material; in each case adult readers must climb an entire story for both recreational material and reference work, and the very valuable first floor is partly taken up by bookstack. The whole idea seems reactionary, a survival from the days when ground level was thought unworthy of the principal rooms. One may hope that Detroit, Philadelphia, and Los Angeles will be the last to follow it.

The attempts to have two main floors, one up a few steps and one down a few steps, seems little better, though there is not such a long stair to climb (Blecker at Albany, Somerville, and Edmonton; Indianapolis, with outside flights of stairs up to the entrance, and short interior flights up and down).

DISTRIBUTION OF ELEMENTS BY FLOORS

To carry further the study of buildings with two or more floors, we present the following summary to show how the larger postwar libraries have placed their more important elements:

desk, the card catalog, and all the "purposeful" reading rooms.

Every plan, large or small, must take it as a basic requirement to keep the five major elements as an unbroken group. This is immediately put to the test (as explained in Ch. 14)

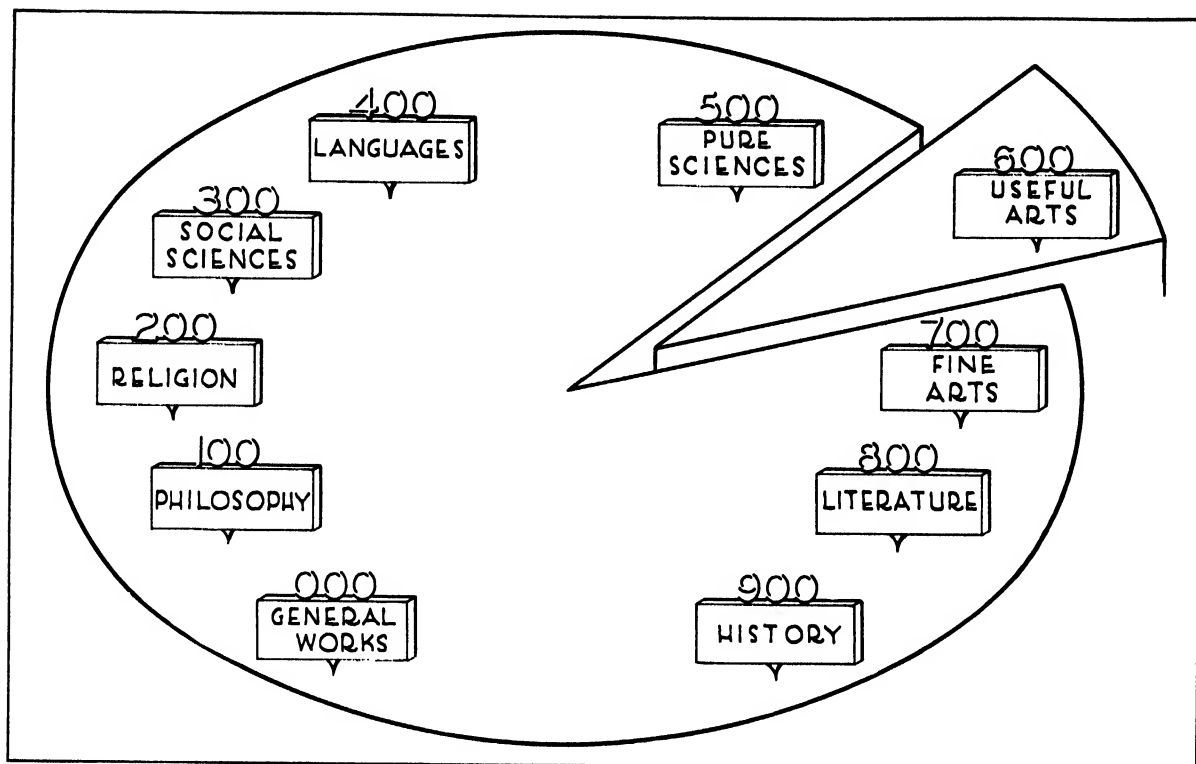
TABLE I
LOCATIONS OF DEPARTMENTS BY FLOORS IN FIFTEEN LARGE POSTWAR BUILDINGS

WHICH IS MAIN FLOOR	CITY	a. CIRC. BKS. AND READ- ERS	b. DESK	c. CAT.	d. GEN. REF.	e. Y. P. STUDY	f. Y. P. LEI- SURE	g. POP. BOOKS	h. PER.	i. NEWS	j. CHIL D.	k. PREP.	l. POPULA- TION
	<i>Rear Stack</i>												
2	Houston		1, 2	2	2			2	2	1	1	3	200m
1	St. Paul	2	1		2			1			B	3	240m
2	Bridgeport	2	2	2	2		1	2		1	1	3	150m
equal	Birmingham	1, 2	1	1	2		1	1	.3		1	2	250m
2	Detroit	2, 3	2	2	2			2	1	1	1	M	1,570m
equal	Indianapolis	1, 2	1	2	2			1,2	2		B	1	365m
2	Philadelphia	2	2	2	1		B		1	B	B	1	2,000m
1	Richmond	1	1	1	1		B	1			B	2	180m
	<i>Center Stack</i>												
2	Portland	2	2	2	2			2		1	1	M	300m
1	Cleveland	1, 2, 3	1, 2, 3	1	1		3	1	1	B	3	4	800m
2	Los Angeles	(1) 2	2	2	2			2	1	1	1	3	1,150m
	<i>Basement Stack</i>												
1	Wilmington	1	1	1	1			1	1		B	1	110m
1	Highland Park	1	1	1	1			1			1	2	55m
1	Baltimore	1 (2)	1	1	1			1		B	B	2	800m
1	Rochester	1 (2)	1	1	1		M	1	2		2	3	328m

A study of this table will give many ideas for planning, and in the light of the comments in this chapter will help to clarify the elements and their relations. First of all it will suggest that some functions have a better claim than others to the most easily accessible position. It also indicates that in the older rear-stack type of building the major stock of circulating adult books (column a), and their readers, are inconveniently placed on the second floor. None of these libraries has provided an increasingly important room (column e) which some more recent smaller libraries have included—for study and school reference work by young people, 14–18 years old.

Major Departments Form a Unit. This table shows the greatest of all the embarrassments suffered by a large library, the disruption of the organism through the necessity of dividing up its major public departments on different floors. A few are easily detachable, such as the children's department and the fiction, each with its catalog. But most of the others are closely related and the building should be planned to preserve this service relationship. Serious adult readers whose time is valuable should move quickly among the "live" portion of the adult circulating and reference book collection, the circulation

when we consider separation of adult circulating books from adult reference books, or separation of adult reference room from adult reading room. In a large library with adult circulation of 100,000 and upward the need of segregation is recognized by setting aside special reference space. But a wide separation of the adult circulating non-fiction from the reference readers is a serious detriment. If there is such a separation, as in some large libraries, reference questions for readers who wish to borrow non-fiction must be answered by the circulation staff, who thus become a second reference staff in another part of



KEEP THE CIRCLE OF KNOWLEDGE UNBROKEN

In the large library, as in the small, the ideal arrangement is to keep the adult non-fiction collection in unbroken sequence, and on the convenient first floor, as at Toledo. If it were a cake, a slice could be neatly cut away; its cells would be well baked and set! But a library is a living organism, changing daily, every book connected to every other book by the nerves and arteries of ideas and daily use. A large or a small slice, such as

a parent-teacher room, a business branch, a technical department, a subject collection, cannot be cut off and set upstairs, or at some distant point, without injury to every other part of the organism and inconvenience to the users. Subject departments, for that reason, should be kept conveniently close to each other, rather than be scattered on two or several floors. Science, industry, art, music, are set off with least harm to the others.

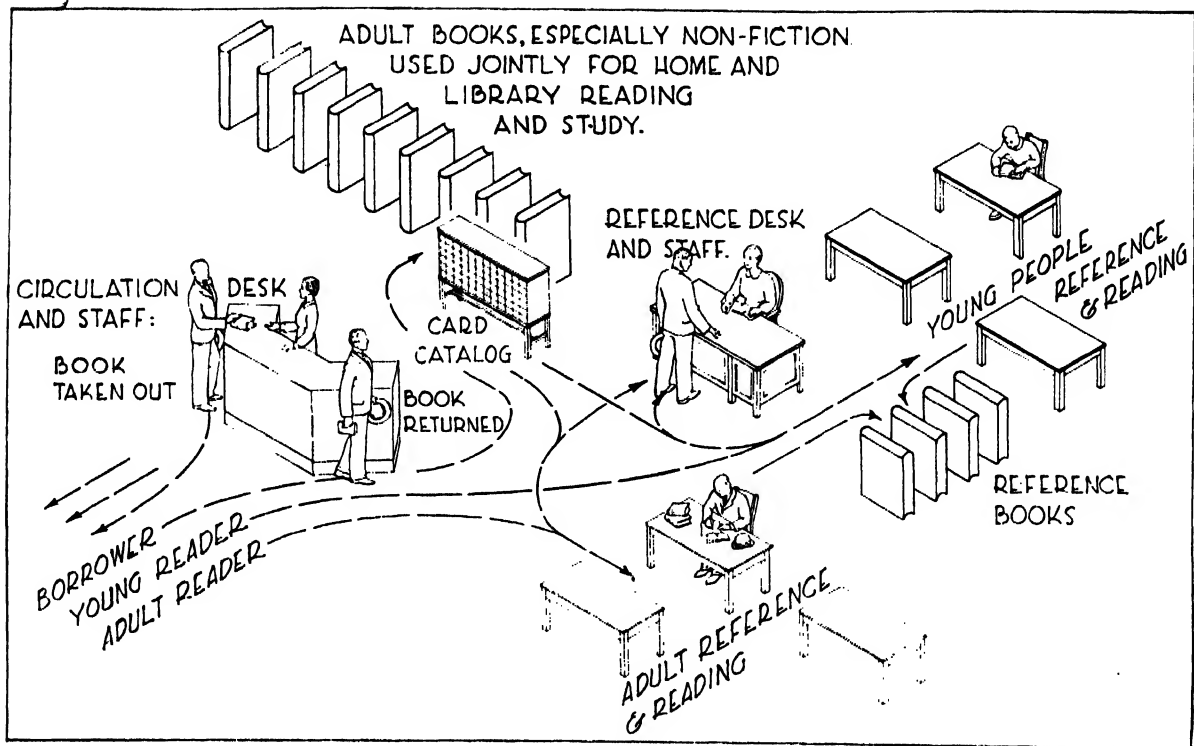
the building. It is a duplication of knowledge and services, an even more expensive solution than duplicating a considerable part of the book-stock in circulation and reference.

UNBROKEN CIRCLE OF KNOWLEDGE

The adult non-fiction collection is one great unit; to remove any subject group is to break the circle. There are few subjects whose ramifications do not extend into many others. For example: is the Economic History of the U. S., or the Haymarket Strike, one of its minor incidents, to be found in the history section or the business and economics section? Is advertising art to be found with the art books or the adver-

tising books? And the typography of advertising: is it art, or advertising, or printing? To get the material desired one may have to search all three. If all the subject groups can be kept together on their single floor, excellent; but if they must be divided on two or three floors, the reader is severely handicapped.

Adult book use should be kept, just as far as possible, on the entrance floor. The use of stairs should be avoided, for generally the man or woman who is doing serious work has little time or energy to spare. Moving any portion of the "live" adult book collection or any purposeful adult reading room used by considerable numbers, to a second or third floor is to be avoided at



THE MAJOR FACTOR IN EVERY LIBRARY PLAN

In every library plan there is a group composed of five major elements, that can be separated only at the peril of daily inconvenience to great numbers of readers. They should be kept together on the main floor:

1a. The bookstock on open shelves primarily for circulation and shelved in the Circulation Department or Open Reading Room, "Open-Shelf Room," "Popular Library," etc. 1b. The books less frequently used but essential for reference work, sometimes circulated, and shelved in or near the Reference Room.

2. The Circulation Room with Circulation Desk, either a part of the General or Open Reading Room, or separate, but with books in it, primarily to lend but frequently used for reference.

3. The public catalog, used by readers and staff for circulating and reference books.

4. The Reference Room for study and looking up questions.

5. The space for the Young People, 15-20 years old. There is increasing concern that they have a room or space of their own, convenient to the Reference Collection, Reference Room, Adult Circulating, Non-Fiction in Open Stacks or Reading Rooms, and the Card Catalog, most used in common by staff and readers. The Book Collection is the common element which holds all the others together. Otherwise their school reference work suffers.

Again: Keep all these together on the main floor!

almost any cost. Toledo is the most striking example of a large library with almost all the "live" adult books and readers on the entrance floor, a plan of unusual convenience and effectiveness.

This is the chief reason why larger buildings on restricted plots are so difficult to plan. Compromises begin just as soon as the adult services

overflow the limits of the main floor. Shall the adult non-fiction stay on the main floor for those who would borrow it? Must the reference department go to the second floor? Shall the adult non-fiction go up with it and be available for reference work? And shall the card catalog go up with it? This was discussed in Ch. 14, where it was pointed out that reference use and bor-

rowing of adult non-fiction are two processes utilizing much the same bookstock, and therefore should not be parted.

A large city library built on too small a plot with its bookstock distributed on several floors must be, through the long years, a sad inconvenience to all who use it or serve in it. Similarly, when funds are not available for an entire building, it is a dangerous, almost impossible undertaking to build the adult departments of a public library in two or more installments. For obviously, some of the major departments must be omitted from the main floor of the first portion, and in the structure added later they will almost certainly not be restored to their proper place.

FIVE MAJOR ELEMENTS

We have emphasized that there are four or five major elements which should form an unbroken group:

Adult Non-Fiction Collection—the “live” bookstock

Circulation Department or Room

General Catalog

Reference Room

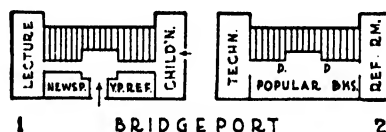
Possibly a Young People’s Room (a recent development)

Any separation of these elements, all closely related, means inconvenience to the majority of readers. One of the disturbing facts in planning is that no two large buildings have made the same combinations of elements, and the distinction between overlapping elements is hard to delimit by definition; therefore the terms themselves are used in such different senses in different buildings, that it is impossible to define any one of the five major elements so as to be strictly correct in any two cases. Of the fifteen larger postwar libraries, ten have kept the first four of these elements together on one floor; five have put them on the first floor and five on the second. The position of this group of elements naturally determines which is the main floor of the library.

Although in the earlier large public library

buildings the position of the bookstack dominated the arrangement of the plan, the importance of its position is steadily decreasing because (a) the more important books are increasingly placed on open shelving, and (b) the location of the reading rooms increasingly determines the location of the stack or of their respective portions of it.

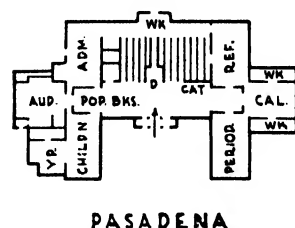
The Book Collection. Further, as shown above, there is increasing realization that the adult non-fiction stock has to be available jointly to four great groups of readers—the adult borrower of serious books, the adult seeker for reference information, and the two corresponding groups of young people who more and more flock to the libraries. Consequently the breaking up of the one great book collection must be resisted to the point of inevitability, and then managed so as to inconvenience the public the least.



Of the fifteen plans listed in the schedule above, all but one put popular books on the same floor as reference; Birmingham, the exception,



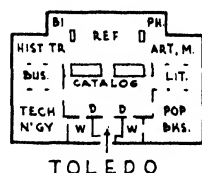
puts them on the first floor next the entrance on the theory that the persons interested in them come principally to borrow them for home reading, that there are many such persons, their stay is short, and with self-charging service and return-service at the entrance they need not go to the central desk. The college libraries have established the principle that the shorter a reader’s stay in the library, the more accessible his room should be; that for extended research,



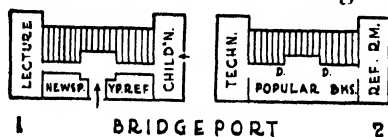
nearness to the entrance is not important. The typical college li-

brary therefore puts reserved reading rooms on the first floor; desk and catalog, special subject and reference rooms on second floor; research rooms on third. The disadvantage, in the public library, is that the fiction reader makes no contact or acquaintance with the more substantial books, is not encouraged to use them, and a fundamental purpose of the library is thwarted.

Circulation Department. The Circulation Department normally consists of the circulation desk (principally for charging and return), the public space around it, and the books on display and on open shelves. The desk can be in the midst of the book collection

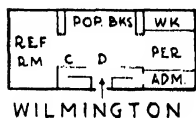


as at Bridgeport; or in a separate room as at Richmond; it can be divided in two as at Bridgeport, Los Angeles, Rochester, Brooklyn; the return portion may be put on a lower floor near the door, as at Portland. But there must be one or more desks near the circulating books on

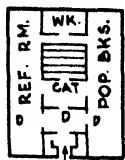


open shelves, and near the entrance to the closed stack, to assist in getting books from both these divisions for readers within the building or for use at home. The catalog must be near by to enable the circulation staff to look up references.

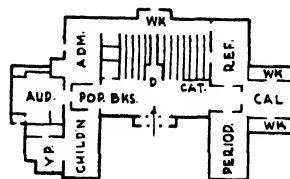
In most of the small libraries of Sexpartite Plan, one enters the circulation room near its desk, and finds the bulk of the circulating book collection directly opposite, an efficient arrangement that is followed in the large libraries of



Wilmington and Pasadena, and on the second floor at Bridgeport. Indianapolis is similar in theory, the books set on two levels around the circulation room walls. In all these cases the reference room is at one side, adjoining, with the catalog generally on that side of the circulation room.



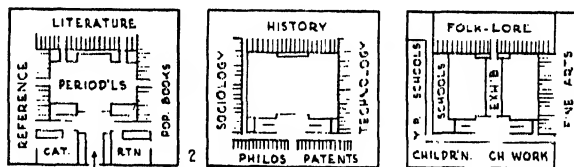
In certain other libraries, *e.g.*, Detroit, Richmond, Portland, and Cleveland, the fiction and a large selection of the non-fiction are on open shelves in a room opposite the reference room.



PASADENA

The crux of the whole matter is that whatever the arrangement the group should be kept together. Birmingham's advantage in placing the desk and more popular books on the first floor near the entrance is dearly bought by splitting-up the group on two floors and handicapping its reference work thereby.

Cleveland's type of plan necessitates considerable travel and loss of time in following up a reference question that involves different subject-groups.

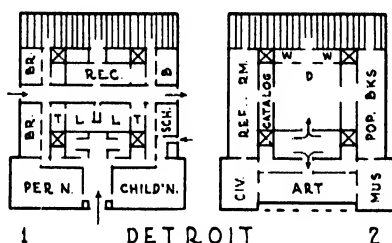


1 CLEVELAND: FIRST, SECOND AND THIRD FLOORS. 3

The Open-Plan libraries, with their utilization of all possible space on one floor for readers, borrowers, and their books, and with the closed bookstack spread out directly below, come nearest this ideal of the unbroken circulation-reference group, *e.g.*, Rochester, Brooklyn, Toledo.

Catalog. The general catalog should be close to the readers, especially to reference users and borrowers of adult non-fiction (which means to reference room and circulation department) and to other desks where assistance is given readers in finding books. The more these elements are scattered the more supplementary subject or other departmental catalogs will be required, as in all the very large libraries. The placement of public catalog in relation to cataloging room is also important, and where one can be near the other on the same level, or directly above the other and quickly accessible by

direct elevator as at Richmond or by short stairs as at Detroit, a duplicate or "official" catalog may be avoided. Richmond's catalog is advantageously placed between the service desk, the popular or open-shelf book room, the reference room, and the stacks, an arrangement of great merit. (See isometric view in Ch. 17.) Detroit, with public book use on the second floor, has its cataloging room aligned underneath, Richmond upside down! (See plans on P. 89.)

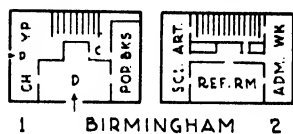


Philadelphia's catalog is centrally located on the second floor, but inconveniently extended along a hall of excessive length and widely separated in the center. Though its reference room is on the first floor, the remaining open-book collection is on the second, so the reason for placing the catalog on the second is obvious.

At Pasadena and in the Open-Plan libraries, e.g., Rochester, Toledo, the catalog stands in the large general hall directly open to all readers, and closely related to the reference and reading rooms, the open-shelf book collections, and the stack. By this arrangement one of the chief factors in service convenience is assured.

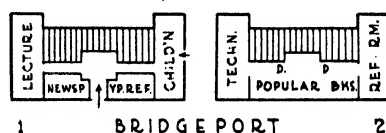
A catalog always expands; this must be considered. Detroit and Philadelphia allow ample space for catalog expansion, while Los Angeles lacks this provision.

Reference. The reference room should be in the heart of the book collection or contiguous



to it, for it draws on all of it. It must be shut off from the confusion of moving persons. Especially should the catalog be accessible. Therefore reference room and catalog may well be the central

members of the group. This is their position in the basement-stack libraries at Baltimore and Rochester. In all the other large libraries except Philadelphia and Birmingham, reference room and catalog are close together with reference room at one side. At Birmingham, reference is at the center front of the second floor, catalog on first, most of the adult non-fiction in stacks at the rear. This whole building is seriously hampered by the assumption that the reference and circulation collections and services can be separated, for separation is drastic—by thrusting a great shaft of stairs, elevators and light courts up and down through the center. The first floor has more space since the light courts are absent. It would have been better to utilize the children's department space for reference, keeping the adult book services together on that floor, moving the children upstairs with separate entrance.



Bridgeport keeps the book collection together on the second floor. Its central stairs are very compact, there are no light shafts, and there is a close circle of usable space permitting direct connection between both reference and circulating desks and all the books.

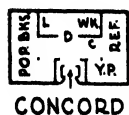
Philadelphia, also using its second floor as the main floor, removes its reference space to a smaller room on the first floor, severely handicapping well-rounded reference work of the modern type, and making access to the card catalog and to much of the book collection tedious and roundabout.

If these drastic separations are bad, how *may* the reference department be placed to advantage? In the smaller libraries, the whole book collection is in one great room, available both to reference students and to borrowers. Every book is equally open and useful to every reader. If this ideal is kept in mind, the reference room

will be kept as close as possible to stacks and circulation department and will not be separated by distance, or by walls, or by any other obstruction. Any plan with a great central obstruction, such as the hollow square at Cleveland or proposed Washington plan, or the tower stack at Fort Worth, makes this ideal difficult to accomplish; for rooms must perforce be scattered and their books and readers forced apart. Detroit, Richmond, Portland, Cleveland, as noted in their diagrams above and in Chs. 30 and 31, put reference on one side, circulation on the opposite side, traffic in the center, and arrange the bookstock in the two rooms, supplemented by stacks close at hand.

Young People. Scarcely one of the fifteen large postwar buildings makes adequate provision for "Young People," "Intermediates," or "Juniors," fifteen to twenty years of age, whose recent descent on the public libraries for school reference work justifies their inclusion as one of the five major library elements. True, at Cleveland, Rochester, Baltimore, a room or space is set aside for their recreational reading. But it is only in the very recent buildings, or by remodeling or reassignment of space in existing buildings, that the problem is solved. It has two distinct aspects; first, their personal recreational or cultural reading, second, their school reference requirements. Their recreational needs are easily met, but their heavy use of adult non-fiction for reference presents a problem wherein one extensive collection of adult non-fiction is to be used by four purpose-groups: adult borrowers, high-school borrowers, adult reference readers, and high-school reference readers. The card catalog must be available to all four. Clearly the young people should be grouped with the adults rather than with the children.

Young people's room adjoins reference service in Concord. Mt. Vernon separates them into two classes, the younger next the children's room, the older on the floor with the adult book collection. A former custom, as at Birmingham, Bridgeport, Pasadena, was to



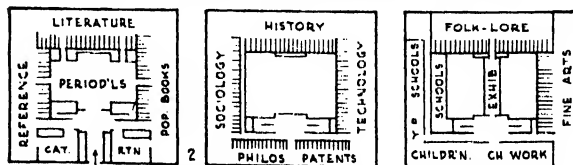
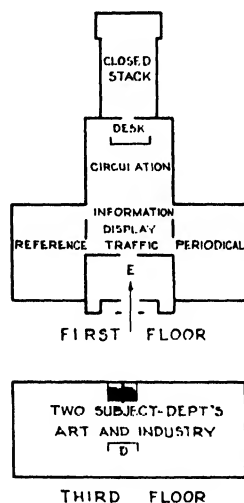
place young people next to the children, whose books and book service are not the same.

This problem constitutes a major puzzle for architect and librarian. The solution, and we have no examples among the large libraries, must come by allotting a special space or room in proximity to adult reference and circulation rooms, and to the book collection.

Specialized Subject Departments. If a library is to have subject departments, shall any of them be forced from the main floor to accommodate less vital activities, such as the Separable Elements listed further on? Can the fiction, or any club or conference room, be placed on a mezzanine or on the second floor?

Providence, in 1899, divided its main floor according to tradition into circulation, reference, and periodical departments, and bookstack. But it broke with tradition in setting up two subject departments on its third floor—art and industry—operating together, because Providence is a city of art industries. Readers and their circulating and reference books, periodicals, and other materials in these two fields of knowledge were brought together so effectively that

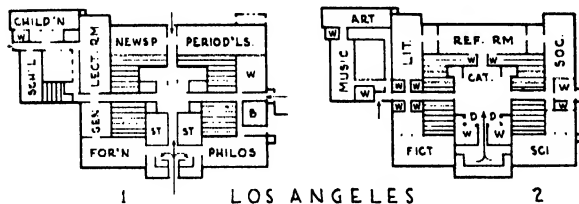
other libraries perforce copied the idea, and further have tended to keep such departments as convenient as possible to the main entrance.



1 CLEVELAND: FIRST, SECOND AND THIRD FLOORS. 3

Cleveland has no subject departments on the ground or basement floor; general reference and literature departments are on the first; Philosophy and Religion, Education, Sociology, His-

tory, and Technology on the second, while Fine Arts, including Music, and the John G. White Collection of Folklore, are on the third floor. At Los Angeles, where the second is the main floor, most of the subject departments as well as the general reference and fiction rooms are here dis-



posed; removed to the first floor are only philosophy and religion, genealogy, the foreign books, the general periodical room, and the schools and teachers room.² The convenience of adult readers and students is therefore quite effectively met, once they have arrived at the upper level. The fact that at Providence, Baltimore, Rochester and Cleveland fine arts is detached and placed on the second or third floor would seem to imply that it, like the local-history department at Richmond, Birmingham, Baltimore, Rochester and other libraries even as small as Mason City, Iowa, can be "lifted" with the least inconvenience to everyone. As pointed out in Ch. 14, industry and science (as at Birmingham), and business and economics, are the next most easily detached; while the social and cultural subjects are so closely integrated with each other and with the general reference work that they should be the last to separate.

The Separable Elements. We have said that four or five major interrelated departments or activities should be kept on the main floor. Everything else may have to be crowded off, and it may be profitable to list some of the remaining elements which are considered as candidates for removal. The various considerations involved are discussed in Chs. 12 to 18.

1. Children's Department may go up or down. See p. 340 and Ch. 16.

2. Idle readers and their newspapers and leisure

²H. S. Hirshberg. "Four library buildings." *A.L.A. Bul.*, 27:732-37. Dec. 1, 1933. Discusses Cleveland, Los Angeles, Philadelphia, Baltimore.

popular magazines may go up or down. "Browsing rooms," similarly. See p. 342 and Ch. 14.

3. All "extra-curricular" activities—club rooms, lectures, story-hours, museums, historical collections—everything not directly connected with main library services—may go up or down. See Ch. 22.

4. Storage books—older, less frequently used books, bound and unbound periodicals, the vast accumulation of gift, surplus, undigested minor materials, may go up or down, in closed stack space. See Ch. 15.

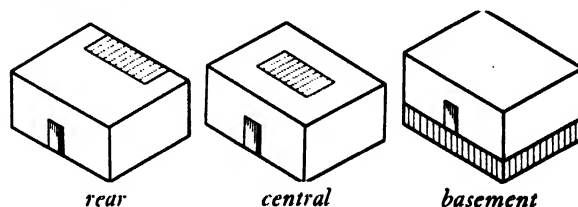
5. Shipping, Binding, Mending, and the Offices—all these will be detached and placed on other floors with comparative ease, though work-rooms for public department staffs should stay on main floor. See Chs. 18, 20.

6. Preparatory Departments—the Order and Catalog Departments, counter for handling Schools, Stations, and Branch books and work. Mezzanines may accommodate some of these. See Chs. 17, 18.

7. Fiction (with or without Popular New Non-fiction). Though possibly the wisdom of this separation is challenged under the head of Book Collection earlier in this chapter.

Placement of the Stack. While the dominance of the great single stack of earlier days has been greatly affected by the more modern idea of placing special portions of it in proximity to the corresponding reading rooms, especially subject rooms, no large building plan can be undertaken without considering the general stack in relation to the five major elements already discussed.

Three broad types of buildings result, distinguished by the position of the bookstack, which in a large library is a closed stack not accessible to readers.



1. Rear bookstack; the oldest, developed when daylight was still essential. If plot is open at the

back, the stack wastes potential well-lighted reading or work space along the rear wall. The few study carrels needed in a public library require no daylight and can be placed in the stack and lighted by electricity. If the plot is backed by a high building or if good light is likely to be cut off in future, the rear position may be justified; not otherwise.

2. Central or "tower stack" extending up through the building and available from the reading rooms around it.

3. Basement Stack, spread out under the first floor and available from the reading rooms above it. This frees the entire first floor for the public.

These three major solutions for the problem of placing the general stack storage in large buildings involve many relationships, discussed in more detail in Ch. 15; also the actual plans and comments in Chs. 24-32 will indicate the pros and cons of many individual solutions. A further summary seems unnecessary here.

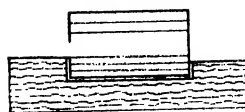
GENERAL FACTORS AND PRINCIPLES

Having discussed definite plans and the ideas of arrangement they illustrate, we will summarize the more general factors and principles which influence modern library planning. Comparing the recent library buildings with their predecessors, it is evident we now have very different ideals and a far greater opportunity to attain them, not only because of changes in building construction and particularly in mechanical equipment, but also because librarians have brought about new relationships with the public.

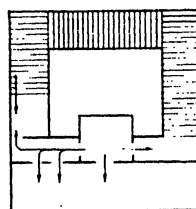
Mechanical Developments: The recent development in artificial lighting and in forced ventilation permits a solid block of building, whereas heretofore a large building had to be built around open courts. The full force of this has not yet been felt. A few years ago the Baltimore and Rochester plans would have been absurd, for the inner ends of the first-floor reading rooms could have been used only at noon on the brightest days.

There is a wider choice in the possible posi-

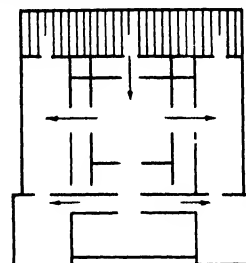
tion of a large bookstack thanks to the greater confidence in water-proofing below ground level, to the development in forced ventilation by means of ducts, and to the demonstration that natural light is of no advantage to it. This is in direct contrast to Boston,



Watertight Basement

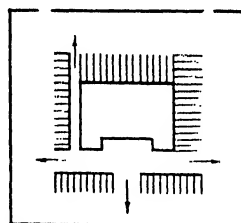


Boston

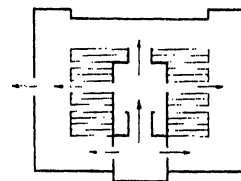


Detroit

whose stack has daylight on both sides. The stack along the rear, typical of the old libraries, is retained only in Philadelphia, Indianapolis, and Detroit; the last two designed at the very beginning of the present era. If they had been designed a few years later, they would doubt-

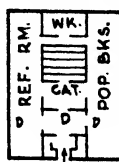


Cleveland

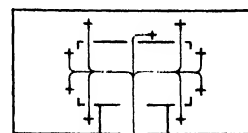


Los Angeles

less have placed the stacks in a dark central position and utilized the entire perimeter for reading or workrooms as at Richmond and Los Angeles, or directly under the main floor as in the Open-Plan type at Wilmington, Baltimore, Roch-



Richmond



Rochester

ester, and Toledo. Cleveland, built at the time of transition between old ideas and new, preserved its entire perimeter for reading rooms but ob-

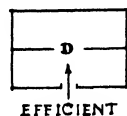
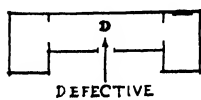
tained daylight in most of its stack by introducing an inner court notwithstanding the excessive travel it implies.

Climatic Factors: In the North a square compact plan is economical, as it has the greatest cubic content for both the least exterior wall-cost and the least surface exposure to winter cold. In the South or Southwest, where there is no winter problem and where the hot climate makes cross-ventilation desirable, extended plans are justified despite the difficulties in interior arrangement described earlier in the chapter. The Houston and Austin libraries are planned so the summer wind can blow through them from south to north. The new Tulsa branches carry this specialization still further, with their windows toward the north, and continuous louvred horizontal openings in the south wall at floor and ceiling that let the wind blow through but exclude the hot sunshine. The louvres are arranged to close in winter.

With the increased use and development of air cooling the compact plan will be equally suited to the South, for an extended plan has greater exposure to heat as well as to cold.

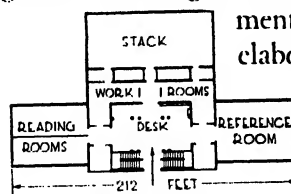
Compactness. To be efficient, a building must be compact. As in military tactics or the game of chess, the greatest number of elements possible must converge on the center of activity: desks, catalog, and bookstack. Therefore, a long narrow plan is defective, and only justified by the need of cross currents of air in a hot climate.

What the architect calls "Circulation," or the system of approaches and intercommunications, easily achieved in the smaller buildings, takes on new difficulties and importance in large ones. Each department should be in easy reach of the main catalog and bookstack. This is impossible in a long narrow plan. Unfortunately available space and building funds seldom permit all the public rooms on a single floor (Pasadena an exception), so vertical communications, stairs and elevators, must be considered.



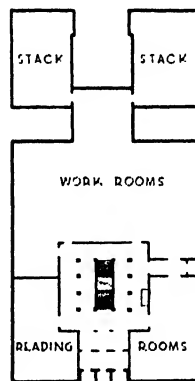
The problem seems much the same for all libraries that subdivide their reading space and utilize two or more floors, no matter whether the building is small or large. For example, the problem of Birmingham was much the same as the problem at Detroit.

Economy of Space. Space is now used to greater advantage. Great entrance halls, monumental rotundas and stairs,

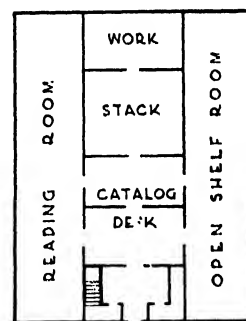


Washington

elaborate walls, piers or columns and great domed or vaulted reading rooms, prompted by a grandeur-complex, are obsolete. The Washington and Newark buildings suffer from this old extravagance; reader and book space on the main floor is too meagre; Newark was forced to place its main depart-



Newark



Richmond

ments upstairs. In contrast, Richmond utilizes its entire main floor to excellent advantage by thoughtful placing of the elements and by simplest entrance and stairway. Yet most persons feel that Richmond has a more beautiful interior. It is a matter of emphasis.

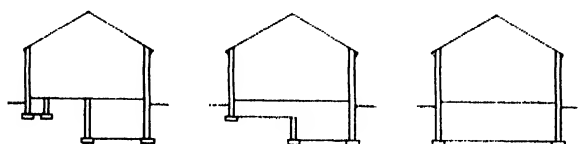
Mezzanines contribute staff and work space in many buildings, notably at Detroit and Berkeley. Rochester places readers in a mezzanine.

Basement use. Ch. 20 discusses more effective development of basement space.

Smaller libraries and branches in the South do not require a basement, for the heating problem is elementary. The Los Angeles branches

excavate only sufficient space for a small heater, though at least a few of the recent buildings construct the main floor clear of the ground with air space beneath.

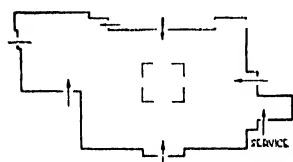
In the North, buildings both large and small require basement space for heating plant and for distribution of heating and water pipes. If separate spaces for these are excavated, each space requires its own interior retaining walls. If the plan is small and compact it costs little more to excavate the entire basement, carry the outside walls down to the basement floor and



avoid interior walls. The extra space gained can be used for general storage, book storage and possibly staff room, toilet rooms and meeting rooms. But unless the ground drops toward the rear, it is difficult to get window space without raising the main floor well above grade, with the drawback of high entrance steps. At Roselle, N. J., only half was excavated and the mistake is realized; the Carpenter Branch at St. Louis claims a substantial saving by doing the same thing. The storage problem at a branch is very different from that at a central building.

Administrative Efficiency. Most public libraries now demand as complete control as possible from as few points as possible, requiring as few attendants, as few steps, and as little labor as possible. A stranger on entering should see books and readers and find his way to the principal rooms without asking questions.

The desk, or desks, must control the entrance and exit of building or room, as the case may be;



must generally oversee the readers and the books; must be within easy reach of a working space. Lines of vision from

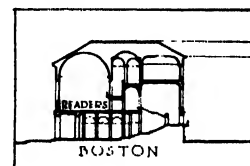
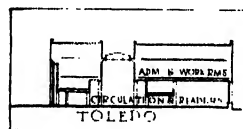
it should be unobstructed.

The fewer the entrances the more economical

in staff and supervisory problems, as Los Angeles has found in letting pedestrians use its many entrances and corridors as a thoroughfare. Where frequent communication between rooms or spaces is necessary, lines of travel should be short and direct.

The emphasis on economy, compactness, and control has produced a reaction which will unquestionably affect future planning. Desirable as these qualities are, some librarians believe henceforth libraries must provide for more personal, leisurely, and intensive services to the individual, with less formal routine, even if the budget expenditure is increased thereby. Others are convinced that the pressure for increased and improved service to the community will always demand economy in operation, in organization and in method.

Accessibility. Libraries are made more accessible by bringing the building closer to the sidewalk and by avoiding unnecessary stairs. Entrance steps have been reduced in number or eliminated altogether at Baltimore, Concord and Toledo. In the newer buildings—Pasadena, Baltimore, Rochester, Brooklyn, Toledo—the



lower floor has become the principal floor, while in the older buildings such as those at Boston, St. Louis, and San Francisco the second is the principal floor.

More specifically, recent large libraries keep adult books and their "readers with a purpose" together on the main floor, where access is direct. None of its space is used for extraneous purposes, and all is subordinated to this concentration on the most usable floor.

Small libraries are enabled to avoid the high entrance steps of the older Carnegie libraries by developments in electric lighting and waterproofing which permit full use of a basement entirely below grade, as at West Toledo.

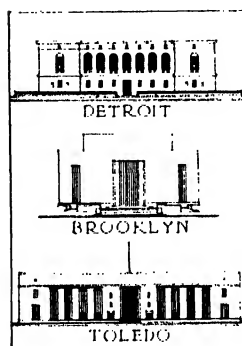
Flexibility. Avoiding fixed, heavy interior walls permits future readjustment of departments, with easier supervision and a sense of openness. The principle of larger open space and less interior structure is evident in the series of comparatively recent libraries of all sizes included in this book. For example, at Santa Barbara and in the Open-Plan libraries, all the readers and many of the books are in a single room. Lines of supervision and communication become shorter and more direct, division between spaces less set and rigid. Noise about the desk and among the reading tables seems to lose itself in the great spaces; fewer walls, fewer echoes. However, noise from halls and stairways should be cut off by partitions. Wilmington screens its entry by plate glass, to intercept noise without destroying the sense of openness and the control of the entrance from the desk.

Opponents have criticized the open interior as "Institutional." They are ready to sacrifice flexibility and efficiency for the charm and intimacy of smaller rooms. Compare the open interior of West Toledo with the many small rooms of Amherst, planned in imitation of a colonial house; or Lake Forest, arranged so that readers cannot see the service desk (Ch. 28). These and other gift libraries are more sumptuous and not so strictly limited in design or operating expense as those built from public funds. This human desire for the friendliness of small spaces was responsible for the earlier vogue of the alcove. But small partitioned spaces are inflexible and preclude supervision of many persons by few attendants. The public, particularly in a city library, can seldom be trusted to behave as well as such plans require.

Another point. Every librarian has, perhaps unconsciously, a degree of personal pride in the building he has helped create. But why assume that his ideas, his work, or even his identity will be of slightest interest to the generation which administers and which uses the building twenty years hence? Something is due our successors in permitting them to readjust the building to the needs we cannot foresee. Thirty years ago it was

easy to see the futility of cutting small buildings into small rooms; yet several larger buildings of 1940 are badly subdivided by permanent partitions, to carry out ideas and purposes which may be superseded within a decade.

Affability. The modern library is less remote, nearer the street, no longer sits on a high pedestal. Instead it sedulously seeks to avoid the stern or institutional aspect. It may be possible to look from outside into the principal rooms, a psychological change in the attitude of a great library toward the people. The entrance is made inviting by omitting steps and



barriers; in the smaller libraries by removal of turnstiles and other evidence of close control. The desk is moved from its ordinary position opposite the entrance to a less conspicuous place, lest an incoming reader be affronted by the evidence that he is under supervision. Along with this more gracious and cordial expression, control of entrance and exit must still be maintained, for human nature has not changed and books still disappear. The decision to have a building of friendly, open aspect will influence such items as first-floor height, window area, closeness to sidewalk, and therefore the entire interior plan.

Open Shelving. Widespread use of open shelving with books directly accessible to the public is well-nigh universal. There is no recent library where the bulk of "live" books is obtainable only through the desk, as was true of Providence, one of the most intelligently planned buildings of its time, and numerous other libraries of the 1900's. The Open Stack is growing in favor even in the largest libraries; in small libraries almost all shelving is now within public reach, and every available foot of reading-room wall soon proves insufficient for it. Note spur-shelving between subject-reading spaces in Rochester and Baltimore (Ch. 32); the free-

standing open shelves in circulation rooms in Bridgeport (Ch. 30), Albany (Ch. 27), Mt. Vernon (Ch. 34); open stacks behind circulation room in many others; lower tiers of stack accessible to readers in each room at Cleveland (Ch. 31). Richmond and Concord have filled potential reading rooms with free-standing bookcases set wide apart. All these libraries have closed stacks in addition.

A few oppose the idea of having many books in the reading rooms. North Tarrytown and Easthampton in their general reading rooms have permitted only a few small bookcases set in panels in the walls, avoiding disturbance to readers by persons passing, and eliminating the suggestion that a reader is in a public building. The last seems unreasonable, since the old-fashioned gentleman's library was often lined with books from floor to ceiling. These reversions to the idea that a public library, large or small, is only a quiet refuge for leisure reading, arise from ignorance of what the modern library is actually doing.

Subject-Departmentalization. The spread of subject-departmentalization, like other fine ideas, may denote only a temporary trend. But the idea is now forty years old, and discussions at conventions indicate it to be fundamental and permanent. Its merits arise from the fact that public book use and reference work have developed to enormous extent; intensiveness and specialization are here to stay and will increase. The American public has formed new reading and reference habits that no one foresaw forty years ago. Subject departments are now in oper-

ation far and wide. A larger staff is required; but more efficient, substantial service is given. No large building can be planned without deciding whether complete or partial subject-departmentalization is to be adopted. Separate rooms are not necessarily demanded. One subject department, advocates will point out, is better than none at all. Ch. 14 goes into the pros and cons.

Intensive Service. The smaller the library the larger the proportionate use of fiction and juvenile books. The larger library makes much more reader, book, and staff provision for serious adult services, and gives them generous space and preferred location. Everywhere there is a definite tendency in this direction, and it appears certain to go much farther under the headings of reference work, adult education, and work with young people. The planning of a building after 1940 must take full cognizance of library progress since 1930, to say nothing of the radical changes since 1900.

Originality. The examples and discussions in this book will have entirely failed in their purpose if they encourage anyone to design or plan a building by copying what *has* been done. Architecture in general is benefiting just now by a definite attempt to depart from the conventional. Architects and librarians should encourage originality, should welcome new departures, provided these have a logical purpose and are based on a sound understanding of function and relationship. They should result in buildings more interesting to look at and more convenient than those which the American people now use.

CHAPTER 34: ALTERATIONS AND ADDITIONS: OBSOLESCENCE

REMODELLING REQUIRES greater ingenuity than building afresh. If the changes are extensive and involve structure, the cost is apt to be more than expected, and the result an unsatisfactory compromise. Tentative plans and rough estimates of the proposed alteration might be compared with similar plans and estimates for a new building of equal accommodation. The result may be surprising, the costs of the two close enough to justify waiting until more funds are available. This chance should be investigated.

If a building is offered as a gift, the cost of its alteration plus its sales value may nearly equal the cost of a new building on another site. It should be thoroughly examined by experts, an experienced librarian, and an architect, if possible, before acceptance. The sentimental attachment of the donor or the public, for some antiquated building, may prove a difficult obstacle.

Often the public considers it wasteful to demolish an existing building, especially if public funds are sought for a new building. At Mt. Vernon, N. Y., a proposed PWA grant and loan of \$300,000 for enlarging the library was voted by the narrowest of margins. Had a new building been proposed, those who understood popular feeling agree that the vote would have been negative.

RULES FOR ALTERATION AND ADDITIONS

1. List the spaces needed for an efficient library as though starting anew, then alter and add to the old building to accommodate these needs.
2. Alter as little as possible, add as much as possible, for addition is cheaper than alteration.
3. Tear down and start afresh if alteration will cost nearly as much as a new building; for remodelling is a compromise, and repair and maintenance costs are higher than for a new building.

UTILIZATION OF RESIDENCES FOR LIBRARIES

Library efficiency should not be hampered out of sentiment for a donor, but the crime is appallingly frequent. This is particularly true when an old residence is offered for use as a library.

When a Midwest city bought an ideally located lot with an ornate vacant mansion thereon as a site for a new branch building, the librarian realized the ominous danger. The house was inadequate in ground area and badly cut up into rooms. An entirely new, well-planned building was clearly needed. Consulting quietly with a few advisers, he prevailed on the city attorney to insert a clause in the deed whereby the owner was to demolish the house within sixty days. Great was the consternation of those satisfied with the makeshift. But a contract was a contract. Demolition could not be stopped, and in a short while the ideal site was bare, ready for the new building which soon materialized.

Public Library, Scarsdale, N. Y. A pre-Revolutionary farmhouse, converted to library use, its antique character carefully retained, period furniture chosen, and the impression of a public building sedulously avoided. Where practicable walls were lined with books. A fireproof bookstack constructed as a rear ell extension, designed to harmonize with the old house. See text as to outcome. Hobart B. Upjohn, architect of the adjustment and additions. 1927. Photo H. H. Costain.





Athenaeum, Westfield, Mass. Style of the new building suggested by that of the old house, now children's wing, at left. Coolidge and Carlson, architects. 1927. Paul J. Weber, photo.

Residences are usually difficult to remodel, unless almost a clean sweep is made of the interior partitions on the main floor, leaving only major supporting posts. Otherwise supervision of the several small rooms from a central service desk is impossible.

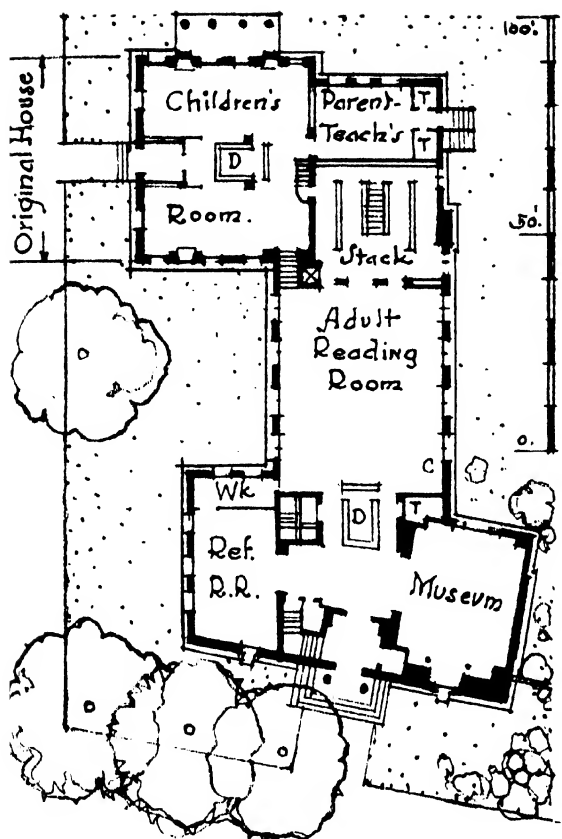
If a steel bookstack is desired, a drawback to a converted residence¹ is that the floor levels do not correspond. The standard distance between stack floors is approximately 7½ ft., whereas in a house it is 9 or 10, but seldom the 15 ft. necessary for two tiers. This inevitably results in troublesome stairs or ramps or a great waste of valuable space. Factors like this are often ignored by would-be economizers.

Because of their inaccessibility and lack of supervision, second floors of old residences are sel-

dom used for other than special collections, research or study rooms, storage, etc., and are wasteful of space and heat.

Of esthetics, little can be written of any value. Each case demands its own solution. Good qualities must be recognized and accentuated, faults concealed. Dark brick and black woodwork can be painted gray-white and pale green; heavy cornices removed; hangings of interesting color chosen to alter proportions of openings, hide ugly door or window trim and even steam-mains. In remodelling, old and new interior wood trim and moldings are frequently brought together, and the shapes are apt to be intrusive and discordant. Staining or varnishing intensi-

¹J. A. Scott, "New libraries out of old," *Wilson Bull.* 2:259:262, Oct. 1924.



Westfield Athenaeum, Westfield, Mass. First floor plan. Old house, indicated at top of drawing, converted for children, new portion assigned to adults, stack used in common. Librarian, catalog room, etc., in second floor of old house. Coolidge and Carlson, architects. 1927.

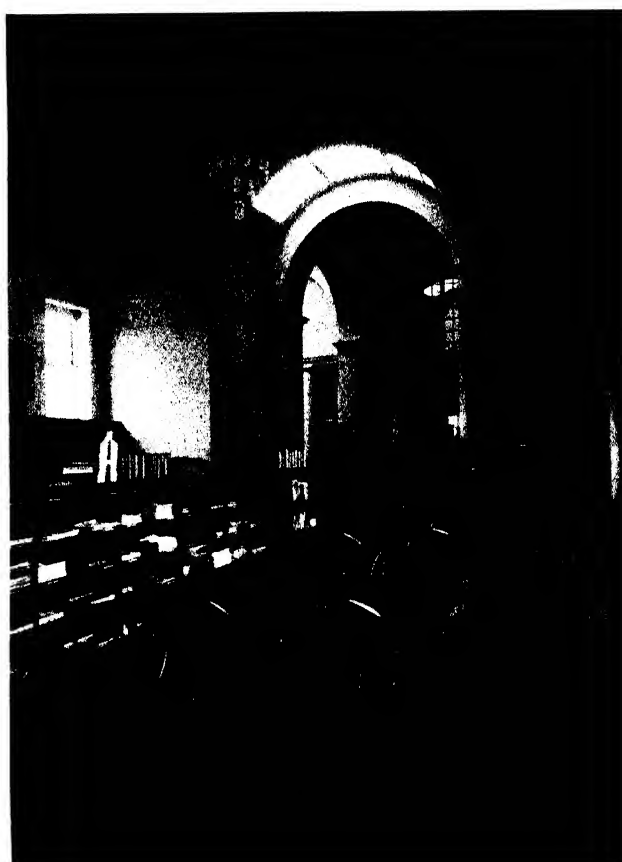
fies this ugliness and a sombre institutional aspect results. If, instead, the wood is painted to tone in with the wall-color, these unpleasant shapes disappear. Clear bright colors are effective, provided they are not discordant.

Another point: With the present rapid development of library service, only such enlargements and alterations as growth absolutely demands should be made, saving funds toward rebuilding.

A fine example of such restraint is at Scarsdale, N. Y.² (pop. 12,500). An interesting pre-²H. M. Lydenberg, "The Scarsdale public library," *Lib. Jour.*, 53:1034-37, Dec. 15, 1928.

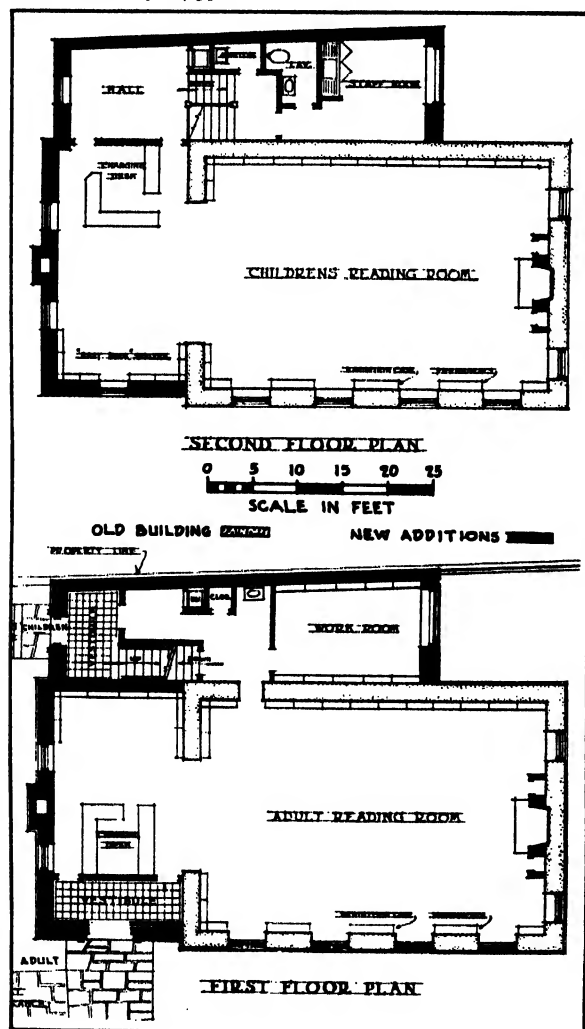
Revolutionary farmhouse, after being renovated and used for several years as a women's clubhouse, became the village's first library. It was renovated with an eye to putting up a new building in five years, but the depression interfered. As a temporary expedient it was decided to build a fireproof ell extension for a bookstack, line the walls of the old part with bookshelves, adjust lighting fixtures, repaint and repaper. A fire-door was installed between the old and new portions, for the latter was given a lower insurance rate. Two large rooms were set aside for cataloging and other preparatory work, the attic made into a store room, and two upper rooms became an apartment for the librarian. The five years stretched to twelve, and in 1940 when no new building was in sight the conscientious library board resigned in a body, in protest against indifference to the need for a new and adequate building.

Westfield Athenaeum. Central vaulted hall, used as the adults' reading room. Tranquillity; dignity; careful avoidance of any form or color that might be strident or restless, such as stained wood cornice, dark window trim or other dark lines or spots in upper wall or arched ceiling. Skylight over charging desk. Entrance hall beyond. Coolidge and Carlson, architects. 1927. Paul J. Weber, photo.



The project for the Athenæum at Westfield, Mass., included the incorporation of a distinguished square old house of the "Greek Revival" period. The exterior, carefully preserved, suggested the classic style adopted for the new part; but the interior partitions of the old house were cleared away and only four posts left. With its

At East Trenton Branch, Trenton, N. J., the interior construction of an old 1796 stone house was completely removed. Much of the charm of the old house was preserved, and an efficient plan developed, with addition at front and side for entrance and subsidiary work-rooms, similar in theory of arrangement to the Newark branches (Ch. 27); adults below, children above, with separate entrances; community room in basement; new fireproof floors; economy of space, complete control. P. L. Fowler Co., architects, 1934. For details see "Lib. Jour.," May 15, 1935.



separate entrance, it has become the children's library.

The larger new part abuts it. Museums and a lecture hall are included, but the library portions are grouped together, both entrances well controlled, and bookstack and workrooms placed in convenient relation. It is one of the best examples of an old residence combined with a new structure, all planned with a thorough understanding of library operation.

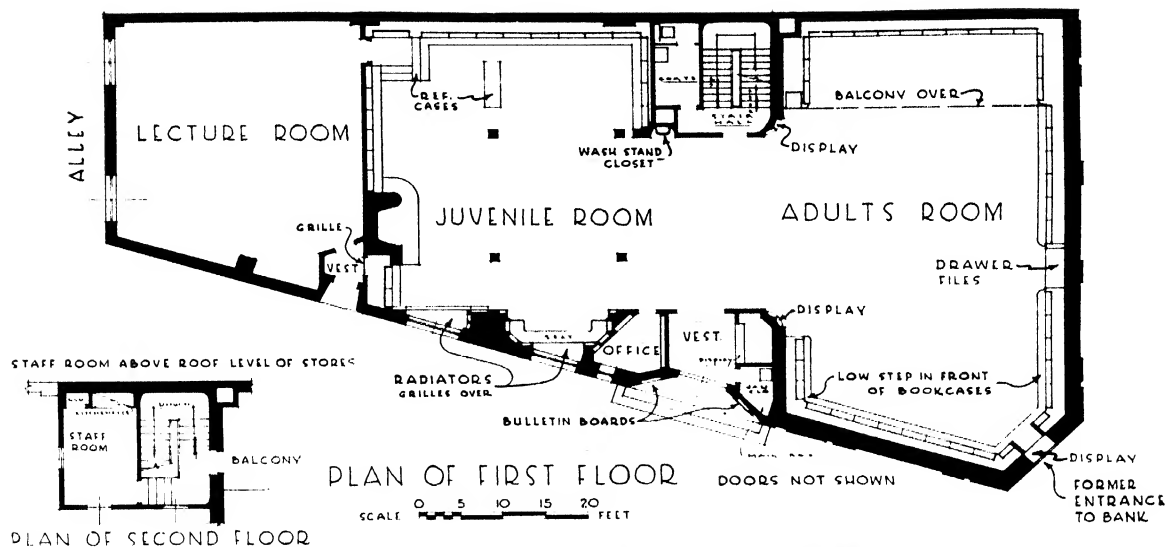
The new part is notable for an unusual interior arrangement, an ingenious adaptation to a difficult site, and a clever deflection of axes without marring the effective vistas. In functional arrangement it is a double reading room plan, each reading room with its independent entrance and desk, both backed against a common stack. The museum and other community rooms complicate the plan yet enrich it. An excellent building in many particulars and well worth study.

The Jones Library at Amherst, Mass., is much admired. It follows the plan of a Colonial house, avoids "the suggestion of efficiency," and has the charm of small rooms with their sense of privacy. See photos on pp. 16 and 114.

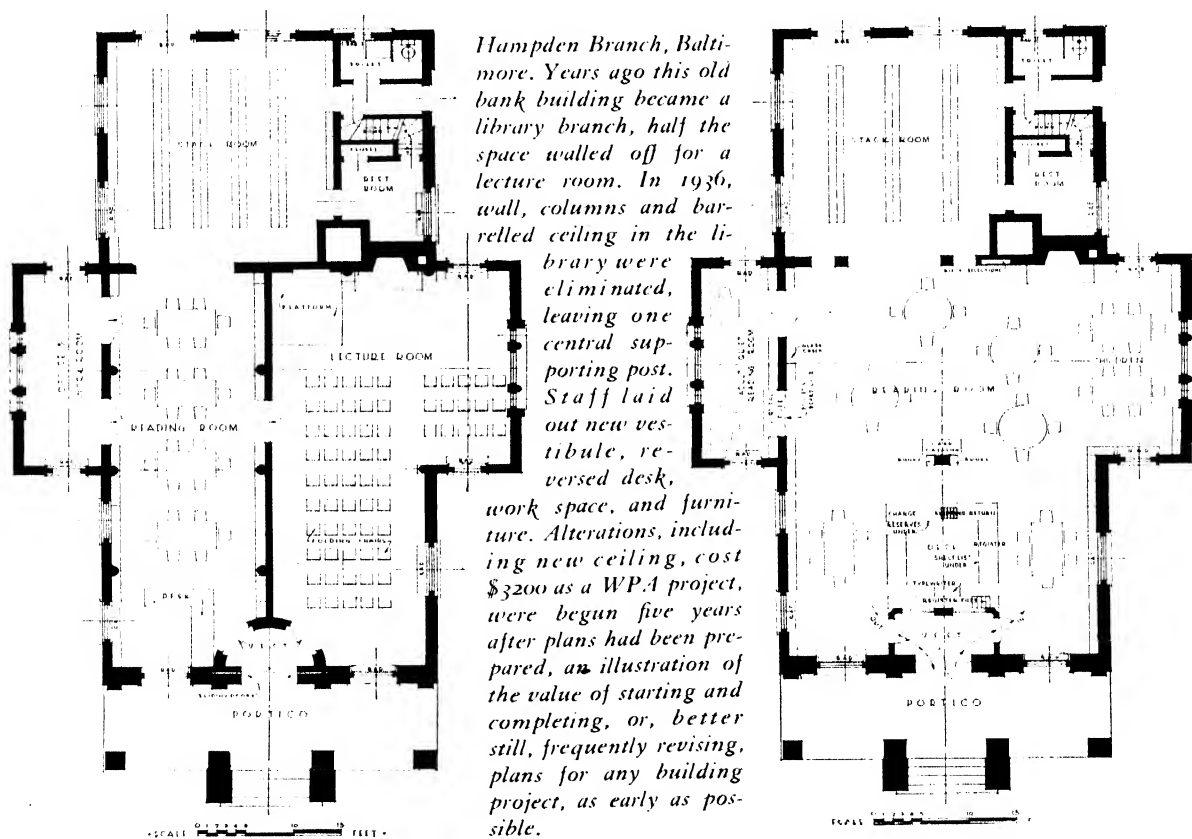
Why is this not a model for the adaptation of old houses to library use?

It would be if, as at Amherst, the donor provided a large endowment, to make possible the staffing and supervision of the various rooms; or if the clientele could be trusted not to abuse its privileges. Amherst's clientele is far above the average in its sense of civic responsibility. In many communities such a library would be impracticable because of theft and disorder. Such a building must be furnished appropriately, or the gracious impression will be lost. Æsthetics must dominate efficiency.

In remodelling a residence the following must be considered: (a) separation of children from adults; (b) ample supervision from circulation desk; (c) quiet for readers; (d) approach to the assembly room, if such is provided, other than through reading rooms; (e) convenient command of circulation desk on main floor



La Grange Branch, Toledo, remodelled from corner bank and 5 store rooms. See text. Geo. W. Walling, architect. 1934.



from librarian's workroom and office; (f) adequate lighting; and (g) avoidance of draft in location of circulation desk, a provision often overlooked!

CONVERSION OF OTHER BUILDINGS

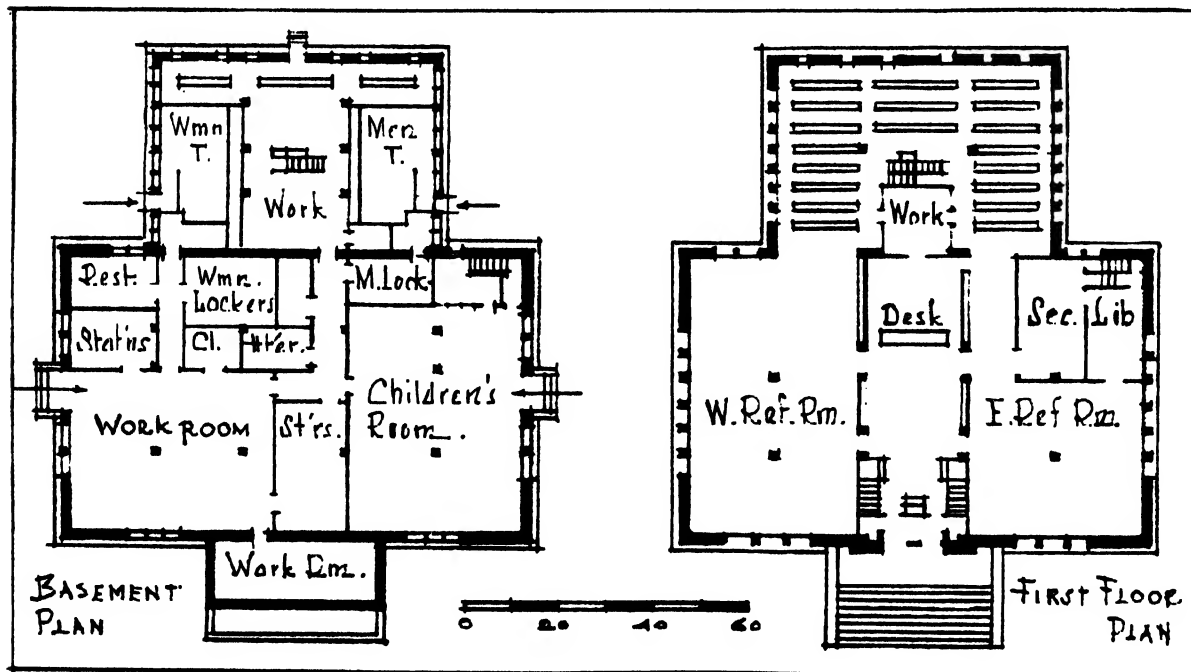
Old municipal buildings in desirable locations may sometimes be utilized for branches, provided their interior walls can be cleared out. Banks and stores with their larger open spaces are much simpler to plan and remodel than houses. A few years ago a branch library at Milwaukee evolved from an abandoned firehouse. It is so much easier for politicians to vote money for police stations than for branch libraries that frequently stations are built when not needed and later abandoned. Then they may be obtained and remodelled for library use.

An old school building was donated by the city of Springfield, Mass., for the Pine Point Branch. The remodelling and equipping, paid for from endowment funds, cost but little over \$10,000. The main rectangle of this "ell" building consisted of an entrance hall and stairway

in the middle, with schoolrooms on either side. The stairway and partitions were torn out and the ceiling continued over, leaving an open rectangle. The delivery desk was arranged as usual in the center, with children's and adults' space separated by low cases; workrooms and toilet were placed in the rear wing.

At Mt. Pleasant Branch, Cleveland, the broad expanse of a bank was inexpensively adapted. For the LaGrange-Central Branch, Toledo, Ohio, a branch bank was combined with five one-story, window-front stores and took on all the characteristics of a modern library, including spacious windows with provision for display. Difficulties were well handled. The entrance was placed near the center (in the first store building) and the bank's clipped-corner doorway made into a display window. A very restrained, modern style of line and decoration was used throughout to overcome the diverse types of rooms. Indirect lighting was installed. All woodwork was covered with Flexwood, permitting rounded walls where the bank, now the adult reading room, joined the other part of the

Long Beach Public Library, Long Beach, Cal. Basement and first floor plans. D. Easton Herwald and Edward L. Mayberry, architects. 1937. Described on pages 362-3.





Long Beach Public Library. Circulation lobby which separates the noise and confusion of circulation routine and catalog consultation from the reading rooms on each side, where all book service is rendered. Implies a staff member on duty in each reading room. Federal Art Project murals in the bold modern manner, unify the upper walls so that the high ventilating windows are not obtrusive. Note absence of outside windows, yet effective indirect lighting. D. Easton Herrald and Edward L. Mayberry, architects. 1937.

building. Into these rounded walls display shelves were set. The children's room and a small auditorium occupy the remaining old store space, with the auditorium opening both on the street and into the library. A staff room was obtained by adding a small penthouse. The total space amounted to 96,300 cu. ft.; the remodelling cost \$21,750.

REARRANGING, ALTERING, AND ENLARGING LIBRARY BUILDINGS

Frequently a progressive librarian will move to a rather recent library building only to find it

overcrowded and funds insufficient for enlargement. The question is how to provide more room for books, readers, and attendants with least cost.

Often idle space can be utilized. If an unused portion of the basement space is well lighted, it may be converted into a workroom. A basement meeting room if light and airy may be turned into a children's room, especially as it usually has an outside entrance. Sprague Branch, Salt Lake City, and the libraries at Mamaroneck, N. Y., and Mishawaka, Ind., did this and thus cleared their main floors for adult use.



Long Beach, Cal., Public Library. Left: Entrance to the original building, 1909.
Right: Entrance to the reconstructed building. Plans on page 160.

In several cities (*e.g.*, Boston), the branches have turned first-floor meeting rooms into children's rooms, to release children's space for intermediates. The structural changes in such alterations are minor.

Too spacious vestibules and corridors may be partitioned into rooms; ceilings of vast height can accommodate a mezzanine floor; a dome is an invitation to install a circular gallery to store unused books; waste stairway areas can be used for elevators or lifts.

Though library buildings are expected to provide for the growth and development of their work for at least 20 years, the need for building enlargement often comes sooner than anticipated:

	<i>Built</i>	<i>Enlarged</i>
High Bridge Branch, N. Y.	1933	1936
Fordham Branch, N. Y.	1923	1936
Hunts Point Branch, N. Y.	1929	1936
Lock Branch, Toledo, O.	1917	1934-5

Dr. Bostwick said of the Central St. Louis Library: "Completed in 1912, it was provided with space which we estimated would last twenty years, but now, after fifteen years' use, we find our storage space already congested."³

In a noteworthy modernization project at Long Beach, Cal., much of the original rectangular building of 1909 was altered in 1935-1937 and a new stack-room wing built at the rear. Floor levels could not be changed, generally true of an alteration. Otherwise the building seems as efficient as if designed anew. The original building cost \$47,000, with 17,000 sq. ft., 226,000 cu. ft., 50,000 vols. The new work cost \$170,000 (PWA \$79,000), added 12,000 sq. ft., 88,000 cu. ft., and increased total capacity to 175,000 vols.

The central circulation lobby was altered. Its ceiling light and an old light well above it were eliminated and indirect electric lighting substituted, a change significant of the modern point of view. The card catalog was set in its wood panelled walls giving quick access from the two main floor reading rooms to the catalog and removing from them the noise and confusion of consultation. The "paper-work" of book circulation is also in the lobby, separated from the service to readers, which is given from desks in the reading rooms. This makes it possible to use clerical help almost entirely at the circulation

³"The librarian's ideas of library design," *Arch. Forum*, 47:507-12, Dec. 1927.

desk, a counter across the lobby at the rear, with a circulation workroom behind it opening into the stacks. The plan is a development on a larger scale of the types described in Ch. 26, solid partitions with high windows replacing the screens that flanked the circulation space.

A checking desk controls the entrance and the original stairways, leading to additional reading rooms and to an art museum on the second floor. The children's department is on the ground floor and has a separate entrance. Here too are workrooms, staff rooms, and storage; also the toilet rooms, entered from outside in accordance with the Southern California custom.

Thousands of books were removed to the stacks, relieving equivalent space in reading rooms, workrooms, and staff quarters. The stack consists of five tiers, 40' x 60', about 40 per cent of the original building. It accommodates 130,000 volumes. For the first time in many years the library has sufficient space for readers and staff. Compare with the Roselle Library, Ch. 24, for stack and workroom arrangement. In both libraries the stacks are open to readers.

Without sacrifice of convenience the building can be still further enlarged by adding a wing behind the stack. This may contain the boys' and girls' department, assembly rooms, etc. Compare Teaneck and Lackawanna plans. These four examples suggest a possible efficient type-plan for a new building, where the plot lies between streets or on a corner, with access at the rear.

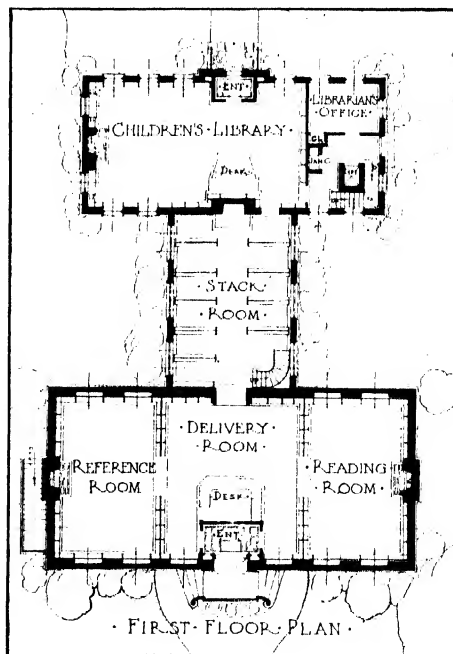
There have been three enlargements of the small original Carnegie library at Mt. Vernon, N. Y., designed by Edward L. Tilton, architect, in 1903. The last enlargement, by other architects, doubles the size of all previous construction and changes the interior arrangement completely. It is based on the principle of adding the greatest possible area with the least obstruction and fewest possible columns or piers.

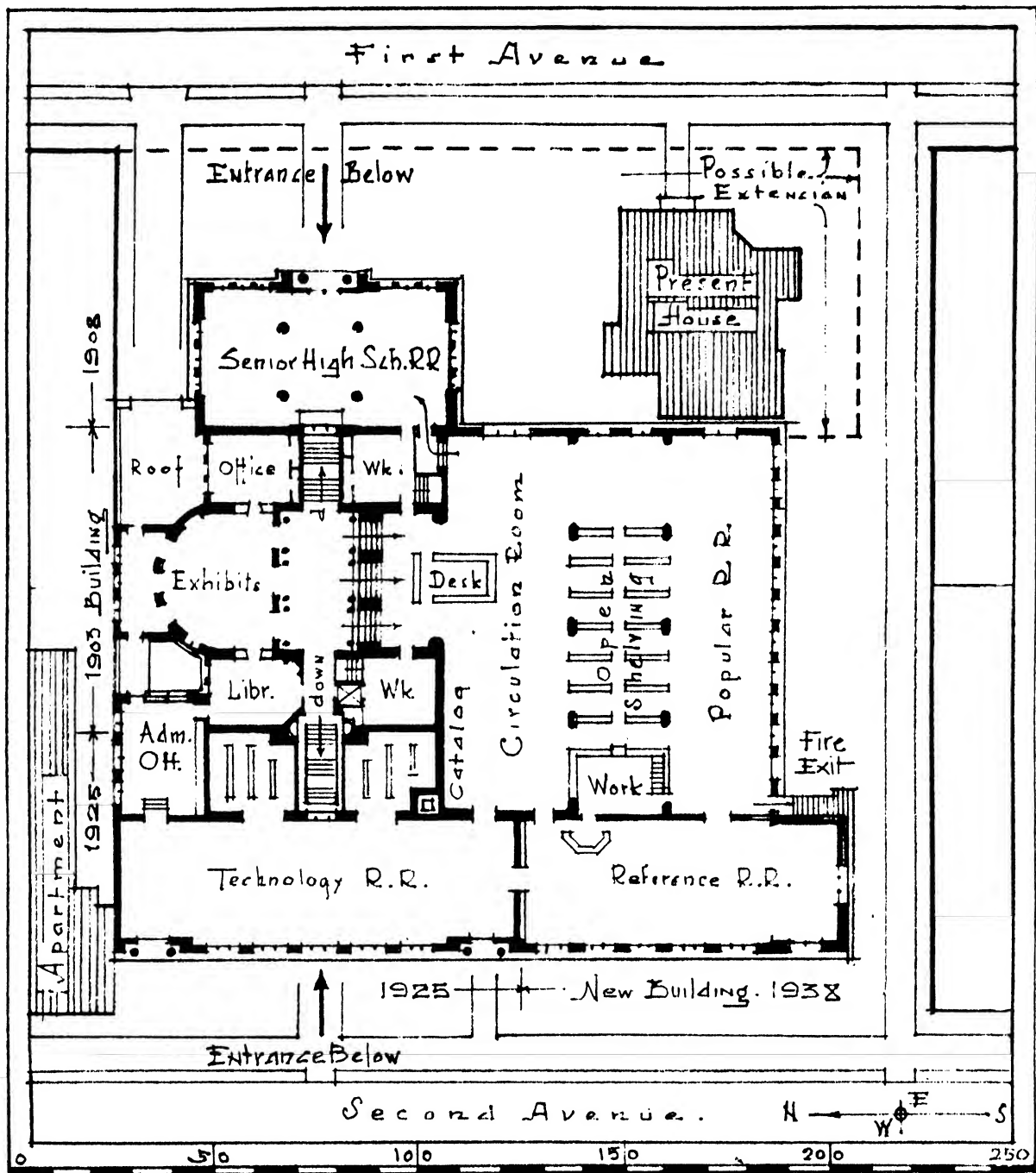
The original building was on a hill between two avenues. The enlargements extended down both slopes, so that now there is a full story at



Public Library, Teaneck, N. J., housing 46,000 vols., increased its size in 1936 from 22,272 to 135,206 cu. ft. by placing a rectangular building in front of the original building and another at the rear, forming an "H." Cost \$67,000. The front building contains the main reading room with librarian's office and an auditorium beneath; the rear, the children's department with workroom, board room, and storage rooms above. The photograph shows the "cross-bar" space (the original 1927 building) now an open stack room. Note central reading space and modern recessed lighting under balcony. George M. Cady, architect. 1936.

Teaneck, N. J., enlargement. The central stem was the original building, the front and rear wings the addition. George M. Cady, architect. 1936.

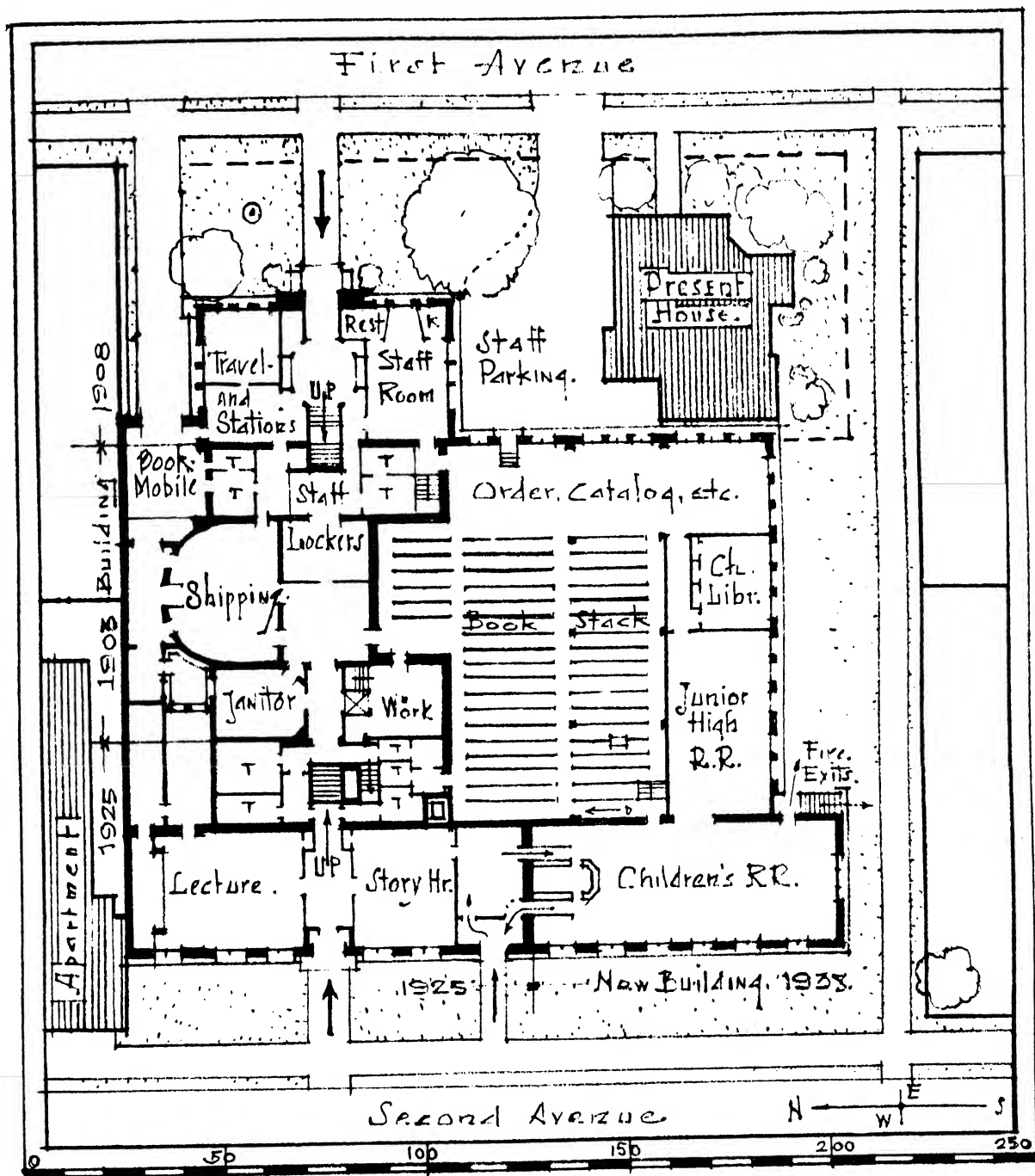




Mt. Vernon, N. Y., Public Library. Main floor plan. E. L. Tilton, architect. 1903, 1908, 1925; Cross and Cross and A. M. Githens, architects. J. L. Wheeler, adviser. 1938.

street level beneath the main floor. The recent addition is to the side, and the most important alteration to the old building is the development of direct approaches from the two streets,

mounting by straight stairways to the old central hall and turning south to the new circulation desk. Beyond it is a range of open bookcases set on the finished floor. Reading rooms are



Mt. Vernon, N. Y., Public Library. Ground floor plan. E. L. Tilton, architect. 1903, 1908, 1925; Cross and Cross, and A. M. Githens, architects. J. L. Wheeler, adviser. 1938.

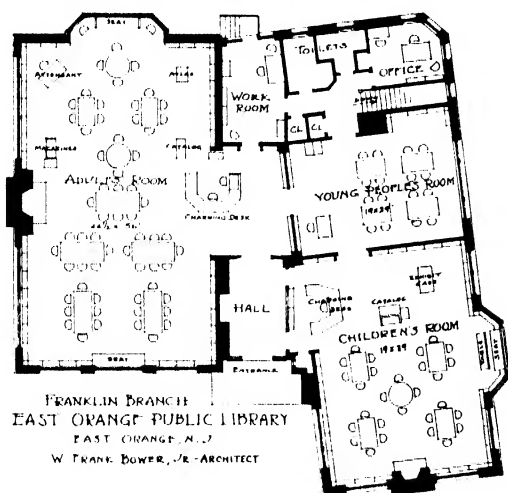
around the outside walls, to be extended in future by a large reading area to the east along First Avenue. Thus the plan-theory parallels the Bridgeport plan, Ch. 30, the public reaching the

open shelving first, and passing through it or by it to the perimeter of reading rooms. The circulation desk controls the entrance and the range of open shelving only.



In East Orange's Franklin Branch enlargement, the end wall of the old building was cut through and this large bay window installed, overlooking a wooded park. To the right through another wide opening in the old wall is the new clerestory window lighting the circulation desk. W. Frank Bower, Jr., architect, A. M. Githens, consultant, 1939.

Below: Plan showing original building at left, with wing added at right, and interesting use of connecting spaces. Plan, courtesy Library Bureau.



On the ground floor in the center is a steel stack in two tiers, quickly available by three staff

stairs in the three workrooms. Around the outside walls are children's and junior high-school rooms, order and catalog room, staff room, garage, travelling library, preparation room, etc.

Library Services During Alteration. The recent alteration of Mt. Vernon went forward in two consecutive operations. During construction, library work went on in the old building. When the addition was finished, the entire library organization was transferred to it and the old part completely taken over by the builders. Thus the library was not closed to the public at all.

But often, when a library must operate while its building is remodelled or enlarged, it may be simpler to go into temporary rented quarters in the neighborhood.

Obsolescence. Depreciation and the ultimate destiny of older library buildings have received little attention.⁴ The three problems most frequently faced are:

⁴Jesse Cunningham, "Causes of obsolescence of library buildings," *A.L.A. Bull.* 25:558-561, 1931. This discusses many detailed factors in obsolescence, some of which are not so fundamental as the three causes listed here.

(1) Neighborhood changes or other factors which have decreased the use of an old building, indicating that the location has little future value for library service.

(2) Increase in population and use to the point that a small building, originally adequate, must be so greatly enlarged that the existing plan will prevent an effective new layout, and entire replacement is indicated.

(3) Poor original planning, with little understanding of library needs; complicated and inflexible interior walls and structure, preventing effective replanning to meet the constant developments of library service. Hundreds of library buildings are in this category. The building must be scrapped and a new one built.

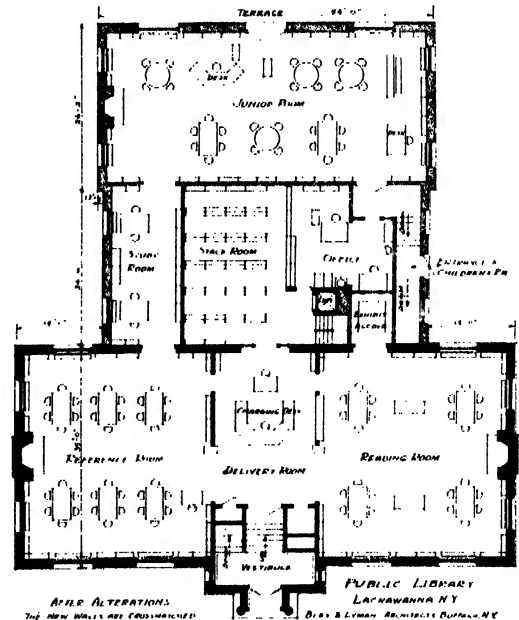
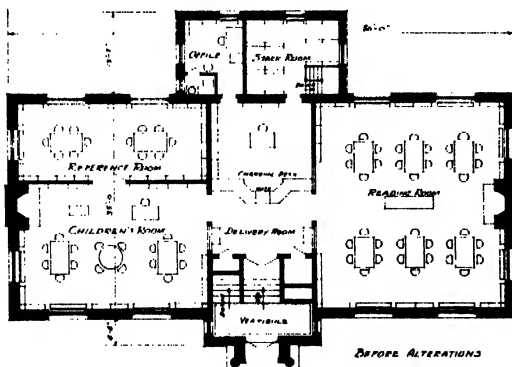
All three situations call for abandonment, sale, or demolition. Sometimes a sentimental attachment to an old building prevents action; sometimes legal difficulties delay or prevent selling or demolishing a gift building.

Under none of the three headings is a definite

formula or rule of procedure available. Legal questions about disposing of a gift building would have to be taken up with the donor, his heirs or successors, or taken into court for a decision. Naturally obsolescence is never foreseen by donors or the fortunate communities which accept central or branch buildings, and there is general embarrassment and reluctance to act. The librarian and trustees should take the initiative, free themselves from the incumbrance of an unprofitable building, and find ways to secure an adequate new one in the most promising site. If an obsolete building stands on an ideal site public sentiment can generally be focussed on the benefits of a clean sweep and a modern building, even if adjoining land must be purchased to enlarge the ground area.

Some Carnegie branches are outmoded; the Carnegie Corporation would doubtless consider a plea for disposal, provided no new funds are asked and the community guarantees the continuance of the service in new housing.

Lackawanna, N. Y., Public Library, Pop. 25,000; cost of new work \$50,000. Partitions removed, addition at rear. Adults in old building at front, intermediates in new room at rear, with stack, study room with reference material, and workrooms between. Compare with the Teaneck example. Children's room on a lower floor; also museum, work and staff rooms, receiving room, storage, lavatories, boiler room, etc. Adults enter at front, intermediates and children at side. Rear door gives access only to a terrace. Compact; the side entrance, to rear children's room (in basement) and intermediates' room, seems cramped and not well controlled, the main floor work space inadequate. Otherwise efficient and economical. Bley and Lyman, architects. 1938. Engravings, courtesy Library Bureau.



CHAPTER 35: COUNTY AND VILLAGE LIBRARIES

SO MANY VILLAGE and county librarians and library commission workers have requested that special attention be given to their problems, that this chapter of summary and references is included. The village library is not a subject separable to itself; there is nothing specialized in its plan or arrangement. In Chapters 23-27 of this book, plans of a number of selected village and small-town libraries are shown and discussed. Other chapters help solve the questions that arise in a new village library project. A full chapter in the present book is rendered unnecessary by the excellent brochure by John A. Lowe, *Small Public Library Buildings*, 1939. (American Library Association, \$1.00.) This contains a valuable general introduction, followed by plans, views and discussions of twenty-four selected buildings, mostly branches, adaptable to village needs.

THE VILLAGE LIBRARY

The opportunity to design a beautiful small library is worth study and care. The trustees or the donor will turn to the State Library Commission and other library advisers for the benefit of their experience. From a study of the libra-

Agawam, Mass. A characteristic small New England library. Cost \$24,000. 10,000 volumes. Coolidge and Carlson, architects. Paul J. Weber, photographer. 1925.



ries in scores of villages a few suggestions emerge:

(1) Beauty through proportion and color is to be preferred to beauty through elaborate ornament.

(2) Avoid elaborate panelling and wall display. Books, books, and more books and printed matter, and convenient service facilities, are the sensible requirements. They are not incompatible with beauty.

(3) Village libraries have been notoriously inadequate in the space they provide for books, for readers, for the work of the staff.

(4) The gift of a building should entitle the donor and trustees to insist on a tax support of at least \$1.00 per capita for books and operation.

(5) If the town is so small that half this (50 cents per capita) will not employ a librarian of real initiative, personality and book knowledge, such as would be endorsed by the state library commission or by a committee from the state association, and a constant inflow of new books (at least 20 cents per capita), then before building the donor and trustees should take steps to insure proper financing by endowment or assured gifts.

(6) The temptation to allow donor or executor to carry through a project without proper advice should be resisted. "The monstrosities that I have seen these past thirty-five years have been principally with memorials. At 'X' it is a sad state of affairs. They had no one to account to but the bank that administered the bequest. For years I have urged that the A.L.A. give its approval on projects and plans under such circumstances," says one experienced planner, while a state official writes, "Not one of the buildings put up in this state in the last five years has sufficient book capacity. In each instance the trustees were advised but felt they knew better. The need for some alcoves or room for librarian's

work space would, one would suppose, be taken for granted, but we usually have difficulty in convincing trustees of this." No project should be undertaken without having professional approval, either from the State Commission, the A.L.A., or a competent library adviser.

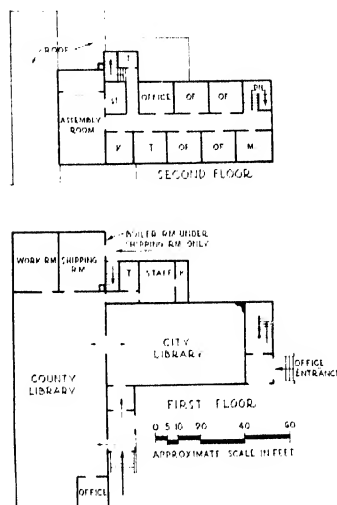
It is just as well to be frank; the country is dotted with village libraries whose budgets are bled for building upkeep, while little is spent on books, and a miserly pittance goes to some "deserving" person ineffective as a librarian. Consequently, they totally miss the idea of a modern, vital service of books, up to date, indispensable in the life of every man, woman and child.

Village residents are accustomed in their own homes to short-cuts and labor-saving devices and they rightly expect parallel improvements in library equipment and routine. Coming up the front walk, they should not find a long flight of steps, icy in winter. On entering, there should be a welcoming atmosphere in the furniture and decorations. Mr. John A. Lowe stresses the value of the "surprise element" in the arrangement, the glimpse of unusual and attractive built-in features, informal and bright furnishings and accessories. Omit every possible interior wall to permit future shifts of space allotted to different functions. One or two large rooms with low bookcase divisions rather than small compartments allow excellent supervision of the whole library and good circulation of air, both essential. Try other arrangements than the usual desk opposite the entrance; it may be strategically

Richard Salter Storrs Library, Longmeadow, Mass. White painted brick. The long shutters make an interesting pattern in dark and light. Cost \$50,000. 25,000 volumes. Smith and Bassetto, architects. 1933.



Solano County Library and County Office Building, Fairfield, Cal., with the library on entire first floor. The city library occupies this front wing, with 16,000 vols. and 30 seats. The main room is for county service, with shipping room and loading platform at rear. W. E. Coffman, architect. 1931. Photos. R. M. Rulofson.



Solano County, Cal., combined city and county work in two wings of the same building. The city library room accommodates thirty readers and 16,000 volumes. The county room accommodates 20,000 volumes, another 85,000 county volumes being out in circulation at the stations. Upstairs are offices for some of the county

officials; these and a small museum and assembly room create excellent contacts.

placed at one side. Bulletin boards, two or three exhibit tables, and built-in cases are worth attention. An attractively designed exterior sign will

Canajoharie, N. Y. Population 2800. Cost \$37,000. 27' x 58'. Shown as an example of a setting appropriate to the open spaces, the leisurely and familiar character of a village. E. L. Tilton and J. M. Githens, architects.





Memorial Library, Roselle, N. J. Cost \$45,500. Population 14,500. Circulation 87,000. See Ch. 24 for plan and Ch. 15 for details of the rear stack wing. Alfred Morton Githens, architect. Alfred Sands Githens, photo. 1937.

give the name and hours of opening. An oil burner or mechanical coal feed, with hot-air heat, is recommended in small buildings open only a few days a week, to save on heat and particularly on janitor expense, and to avoid frozen plumbing in cold climates. See Checklist of items in Ch. 11.

Since this entire book pertains to the problems of building, it would be well for the library committee to study its chapters for material applying to the village library.

COUNTY HEADQUARTERS

There has been little printed about the headquarters building of a county library system which houses the central stock, the book prepa-

ration, records and administration. This is due to the fact that the new county service is usually housed in the local public library building at the county seat or else space is assigned for it in a county office building or courthouse. It is good to combine it with the public library so the two units work together, utilizing much equipment in common; consequently, a wing, or other addition to the public library, may be best. Often this is not feasible. But if there is no public library and the county buildings are crowded, it may be wise to build a county headquarters combined with a new public library, as at Solano County, California, illustrated here. The combination works well, with county offices on the second floor. Such a library attracts more and

more county borrowers. But it will not work well if the public departments of the library are not on the first floor.

Bookstock, staff-work space, and reading and circulation spaces for county borrowers are the three major requirements for the headquarters plan. The chief function of the county library is

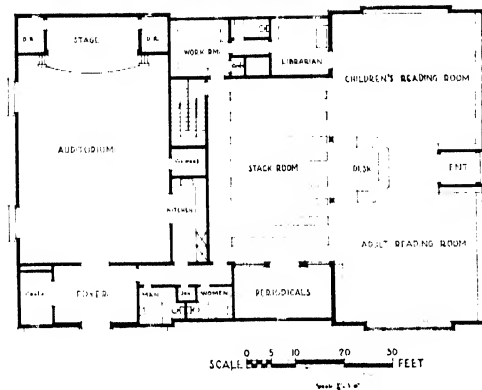


Rathbun Library, East Haddam, Conn. Cost \$52,000. 33' x 60' with wing 24' x 30'. Capacity, 10,000 vols. and 60 seats. W. F. Brooks, architect. 1935.

should accommodate the stock that accumulates in dull periods. Provide especially for the possibility of contracting with the schools (as in California) for handling the school library books for the county.

A detailed list for the County Headquarters follows:

- (1) Adequate but compact and inexpensive stacks, with sorting room for handling returned books and their records.
- (2) County staff work space for
 - a. Ordering, cataloging, and preparation of bookstock
 - b. Reference equipment for mail and telephone reference requests
 - c. Invoices and records involved in making up shipments
 - d. Shipping room, preferably enclosed, for housing trucks and packing them with travelling

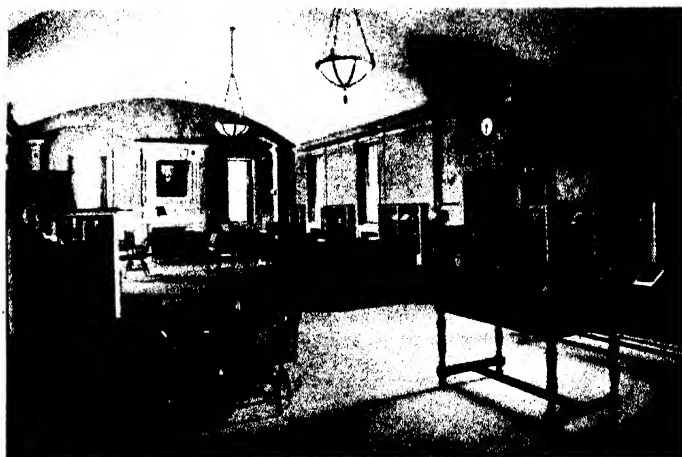


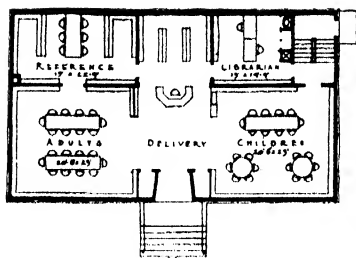
Deschutes County Library, Bend, Ore. Right hand wing with entrance, follows conventional plan. Large stack room behind service desk accommodates county, as well as local, stock. Workroom too remote from service desk. Book lift between basement book storage and main floor workroom. Rear wing for large auditorium. Area 6000 sq. ft. including auditorium. Cost \$30,000. Whitehouse and Church, architects, Portland. 1939.

to keep most of its stock in rotation among its distributing points.

As much as 80% or 90% of the county bookstock may well be at all times in the branches and stations (stations are delivery points in schools, stores and homes, open part-time for neighborhood use) or in the hands of the readers who patronize them. But central stacks

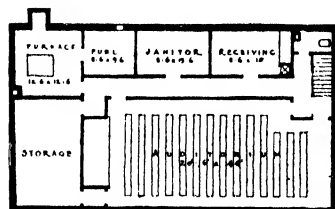
Main reading room, Rathbun Library. Though felicitous in its architecture, the subordination of book space to wall panelling and trim is a major error which handicaps service in every respect for years. One object of the present volume is to emphasize library needs as the goal of planning and design.



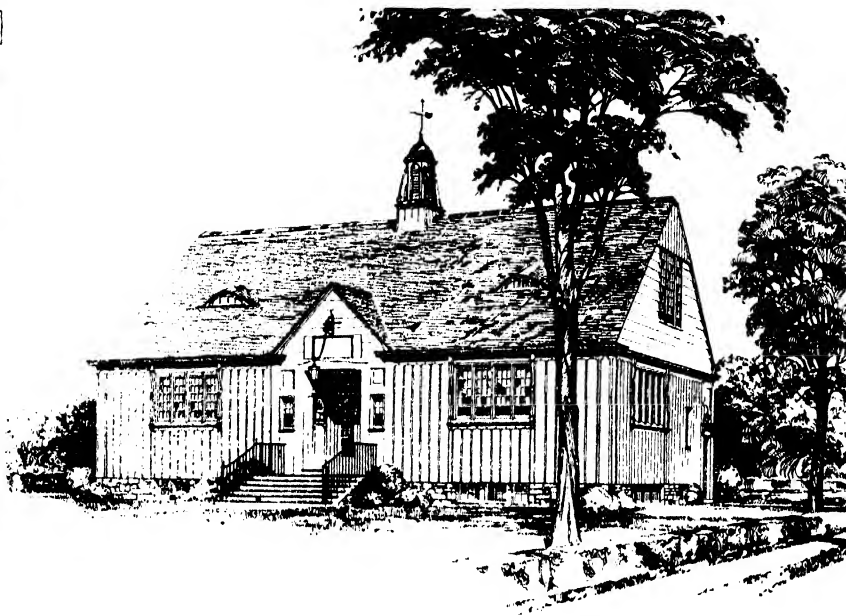


FIRST FLOOR PLAN

SCALE FOR PLANS
0 5 10 15 20



BASEMENT PLAN



An effective design from White Pine Architectural Competition, 1923, from White Pine Series of Architectural Monographs, Aug., 1923. The second and fourth prize designs (reproduced by permission of Mr. Russell Whitehead, editor and present owner of the copyright) are in many ways the most practical and attractive. Current practice would be to abolish the solid partitions between the adult and reference space and the children's and librarian's space in so small a building, using a glass screen around the office workrooms. Some would wish a fireplace included. Above design by H. A. Salisbury and S. A. Stott; Omaha, Neb.

Design below, by M. G. Kingsley, of Lakewood, Ohio, escapes the trite left and right arrangement, with

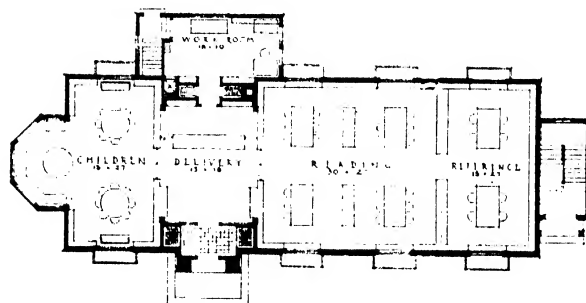
an off-center entrance and a well-designed window for the children's room. Both second floors could be utilized for historical museums. The separate entrance to basement auditorium is well conceived, and permits a building close to the ground. The reference space should be nearer the service desk and catalog to encourage quick personal aid on reference questions.



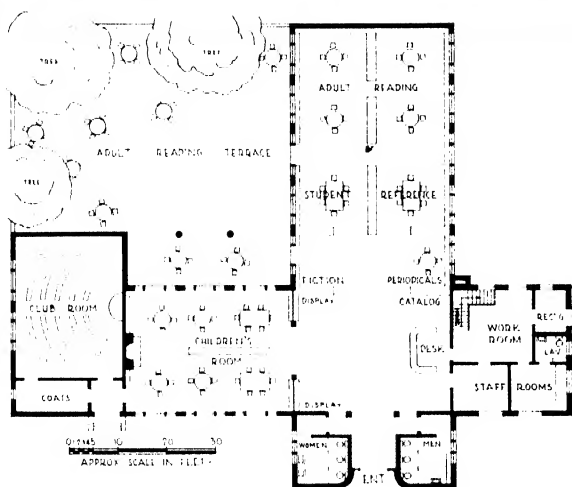
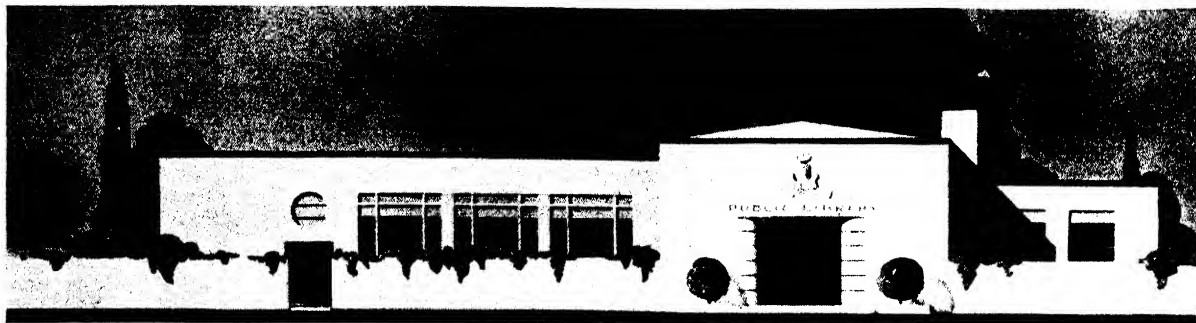
cases and parcels. Loading should be under cover. If necessary the stacks and assembling room may be on a second floor, with elevator at hand, but compare such inconvenience with the Solano plan.

(3) Circulation and reference service direct to readers who come from outside the city to use the county collections. If there is likely to be a contract or a combination with the city library to give both local public library service and county service, the plan must be studied to provide more adequately for the following:

c. Equipment and staff for circulation work, including service desk and open shelving.



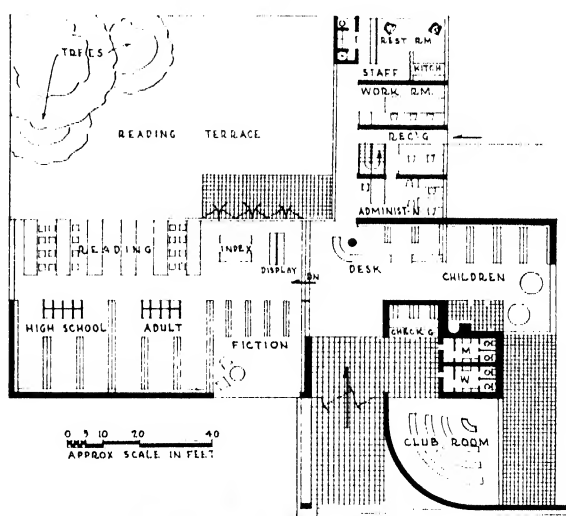
FIRST FLOOR PLAN
0 5 10 15 20

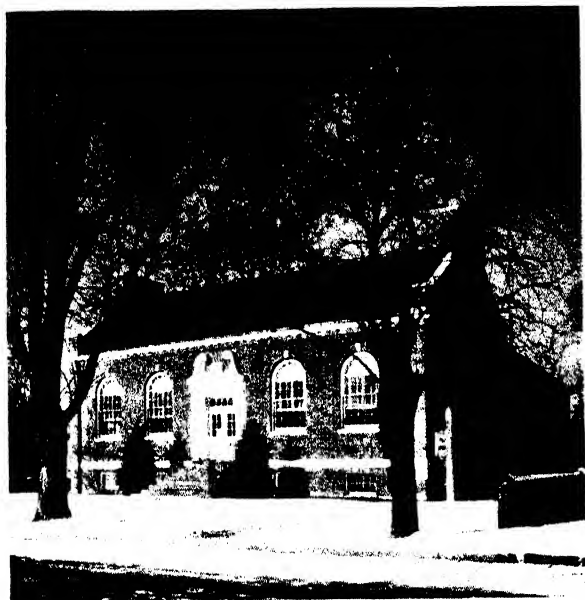


New and unconventional solutions for the design of small library buildings are badly needed. This design by Leo L. Fischer, New York University 1935-36, shows modernistic influence. Service desk well related to the generous workroom space, but gives poor supervision of adult space and washrooms. The three wings offer advantages over the typical plain rectangle. The placing of chairs and readers' tables is quite unusual; the workroom wing generous. Either of these two plans would be a distinct improvement over most small libraries.

These designs were submitted in a competition, and published in "Bulletin of the Beaux Arts Institute of Design," June-July, 1936.

Design for village library by Ralph E. Slay, Georgia Institute of Technology, 1935-36. Plan a successful departure from the conventional, following general composition of the L-plan—described in Ch. 25. While the wall expanse in such a plan adds somewhat to cost, it is well invested because of the additional light. Club room has its own entrance; it could be omitted altogether. Reference wing at rear might be reallocated as between adults and high school students, but the reference work for both age groups is conveniently near desk and further tables provide a quiet retreat with high school students not annoying adults.





Public Library at Metuchen, N. J., WPA project, cost \$74,276, contents 105,000 cubic feet. John Noble Pierson and Son, Inc., architects. 1937.

f. Reference materials, encyclopedias, handbooks, periodical files, a goodly assortment of non-circulating non-fiction. These may be used by local readers but must also be the source for answering reference questions sent or 'phoned in from the branches.

g. If the county system serves the school libraries in the county or supplies their books, much more space is required for staff reference work, for additional bookstock, and for sorting and shipping.

h. County headquarters should provide rest rooms, conversation and committee rooms, and other hospitalities for patrons coming from the county. However, at most county headquarters where rural service is effectively developed, patrons from outlying points get nearly all their book service at or through their home branch or by mail.

i. A special children's room will be necessary if a local public library is to develop in the absence of any other such library.

COUNTY BRANCHES

Buildings for county library headquarters or small local branches are not so essential as adequate bookstock and personnel. "We lay no stress on buildings; funds are small and book demands enormous." But where funds are available for a sound and effective service (at least 50 cents or 60 cents per capita), county work is often in bad straits for central headquarters, and villages of 4,000–5,000 population and upward need to graduate from the small free space in schoolhouse or rented store to their own small economical branch buildings.

A local branch of the county library will be very much like the small city branch outlined in the next chapter, its arrangement shown in Chs. 23–27. In exterior materials and proportions and in general appearance it will fit familiarly into the small village surroundings.

CHAPTER 36: BRANCH LIBRARIES: SOME SPECIAL PROBLEMS AND TYPES

(See Chapters 23-28 for plans and discussions of many branch buildings)

BRANCHES PLAY SO large a part in the service of the American public library that in some large cities two thirds of the total book circulation is handled at branches. Stimulated by Carnegie gifts, branches sprang up freely in larger cities for a quarter century before the War, and the movement spread later to the smaller cities. From 1900 to 1918 the building of branches was at its height. After the Carnegie building gifts were discontinued in 1917 branch building was checked, and during the depression it almost ceased except for occasional unemployment-relief projects, and has not yet resumed on the former scale. The need is now greater than ever. Though large trailer vans equipped for transporting and lending books will doubtless care increasingly for small outlying neighborhoods, they can provide for little of the more intensive reference work increasingly demanded. Further, the movement of population to cities and their suburban neighborhoods has gone steadily on, and several hundred branches all over the country are operating in rented or other housing because the book demands of this population must be met.

NUMBER OF BRANCHES TO PROVIDE

A table prepared by the authors shows the scale on which branch libraries have been provided in

¹Supplied by A.L.A. or appearing in *A.L.A. Bul.*, 30:258-77, Apr. (Pt. 1), 1936, plus additional unpublished returns to A.L.A. Headquarters for smaller cities. This table is available on request. It is summarized in Table 2, Ch. 4.

²H. T. Kennedy, "When is a branch library justified?" *Libraries*, 31:1-4, Jan. 1926.

³Harry Devereaux, "Two studies in circulation per assistant," *Lib. Jour.*, 57:172-176, Feb. 15, 1932. Ralph A. Ulveling, "Administration of branch systems," in C. B. Joeckel. *Current Issues in Library Administration*, pp. 135-162. Univ. of Chicago, 1939. C. W. Herbert, "Personnel requirements for library branches in relation to circulation," *Lib. Quart.*, 3:292-304, July 1933.

American cities of 50,000 population upward, based on 1928 and 1935 statistics.¹ In 1928 these cities showed 1053 branches, of which 575 had their own buildings. In 1935 there were 1400 branches, but the depression had held back new construction so only 583 had their own buildings. Table 2 in Ch. 4 summarizes, shows the actual number of branch buildings per city population and suggests a minimum population per branch.

Both staffs and books are in general less adequate at existing branches than was the case before the depression. Though few new branches are in immediate prospect, public demand for branches is widespread, and hundreds of busy branches now operating under difficulties in rented or temporary quarters should be adequately housed.

Using Table 2, in Ch. 4, a city of 150,000-200,000 would be justified in having three branches, but the population served by each would not be $\frac{1}{3}$ the total, for doubtless the central would serve from $\frac{1}{3}$ to $\frac{1}{2}$ the total population, the branches serving the remainder, apportioned 25,000 to 40,000 each. If they lent 10 books per capita this would justify them, but seldom will they do that well. As pointed out in Ch. 4, there is an increasing belief among librarians that the cost of staffing and operating an additional branch cannot be justified for a probable circulation of less than 100,000.²

Staffing involves a careful estimate of circulation. A favorite formula is: one assistant per 20,000 circulation. This figure was developed several years ago,³ and referred originally to the whole library system. Obviously per-assistant circulation is higher at branches than at centrals and for systems, because preparatory work is generally centralized and it, like reference work, does not show up in circulation figures. With the tendency to utilize clerical assistants, espe-



Circulation Department at West Side Branch, Massillon, showing the modernistic details and openness which make the branch of today so agreeable to library users. Albrecht and Wilhelm, architects. 1937. Courtesy Library Bureau.

cially student part-time help for circulation routines in rush hours, and to centralize preparation and book repair, 25,000 to 30,000 may be a fair figure. On the contrary, with the remarkable growth of reference work at any progressive branch, the pressure on the staff is almost unbearable in many cities, and librarians naturally feel that reference needs of the public should be not only met but encouraged. Here is a highly important matter to consider. This all means, of course, that unless a staff of four or five can be afforded, ready to render effective reference and advisory book service, the branch should not be undertaken, and the service concentrated at central or a larger branch.

BOOKSTOCK

The branch bookstock will be much smaller than that at central in proportion to circulation because fewer of the less used, older, more specialized books can be afforded or should be carried, and therefore the per-volume turnover of stock will be much heavier. At a busy branch the bookstock may be a third larger than the available shelving.⁴ This is a dangerous formula to count on, for unless the stock is constantly weeded and replenished and the branch active and efficient, public patronage will not reach any such proportion. It is safer and more nearly in line with the usual practice to figure on shelving for *all* the stock, for the busier the stock the more it will have to be built up beyond first expectations. Stock in the usual city branch will

generally run from 8000 to 15,000 volumes, according to population and circulation, and additions will be handled by corresponding withdrawals of old and worn-out books, or transfers to central. More branches should have balcony and basement stacks or other space for more books.

Tables 4, 8 and 12 in Ch. 4 show by population size groups:

(a) adult and juvenile, and central and branch bookstock in relation to total

(b) adult and juvenile, and central and branch circulation, in relation to total

(c) central, branch, and departmental staff, in relation to total

As these three tables are based on reports from the same 59 typical cities, many helpful comparisons may be made between them. Branches will

⁴See Ch. 15, pp. 135-6, concerning turnover and its effect on shelving at a group of New York City branches.

Bond Hill Branch, Cincinnati, is full of interesting detail. Of old brick, painted. Contract price \$13,118, including electric fixtures and heating. Main room 60' x 25' (see Ch. 41 for view) workroom wing at rear 7' x 12'. 43,207 cu. ft. at 30 cents. Screens \$180 extra, furniture and fixtures \$2200, architect's fee \$787. Asphalt-asbestos tile roof, tiletex floor, exposed reading room beams of Oregon fir, shelving and furniture oak, window frames metal. Hot water heat from coal furnace, automatic stoker. The service desk stands at right of entrance. No "sweating" has been experienced from the solid brick wall, though there is no furring and bookcases have a thin wood backing; foundation and walls were thoroughly waterproofed. Basement extends under entire building, providing for overflow shelving. Samuel Hannaford and Sons, architects.





Montavilla Branch, at Portland, Ore., constructed 1935 with relief work funds (cost \$6105) is one of seventeen branches built outside the library budget. Seven other branches are Carnegie buildings. Of four built by community associations, two given outright, one purchased by the library and one rented. Three others in rented buildings designed for library use but convertible into bungalows. Two more in rented store buildings. Herman Brookman, architect.

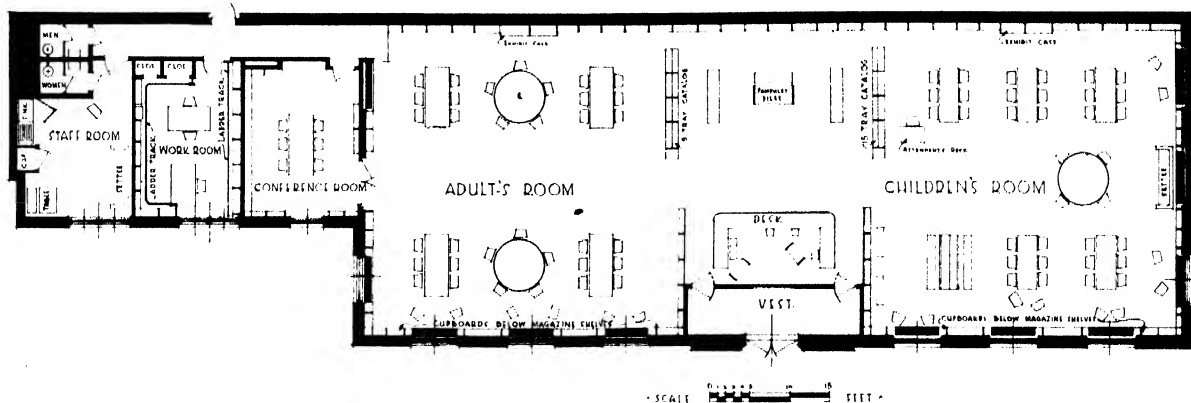
probably handle none of the preparatory processes of ordering, accessioning, cataloging, classifying or binding, as distinct from mending. These are concentrated at central, and work space for them can be omitted. But this does not justify inadequate workroom space for the serv-

ices that are carried on, as discussed in Ch. 18.

READERS

Table 2 of Ch. 11 and Table 9 of Ch. 4 suggest proportions of adults' and children's seats for branches and centrals. For added data see

Briggs Branch at Trenton, in a wing addition to a Senior High School, is unusually fortunate in its location, general plan, lighting; used almost as much by the adults as by school pupils, it separates them by a delivery desk and two projecting bookcases which form a reference and card catalog consulting alcove. Note the conference room, essential feature of a school library, and long vestibule with two doors. Ernest K. Sibley, architect. 1932.





San Pedro Park Branch, San Antonio, Tex. Serious architecture of an Hispano-Italian type, studied for light and shade. Design handicapped through lack of planting. Cost \$35,000. Atlee B. Ayres and Robert M. Ayres, architects. 1930. Harvey Patterson, photo.

Tables 4, 8 and 12 of Ch. 4. These show that young people patronize both central libraries and branches more heavily in smaller communities than in very large cities and that, in the branches reporting, the proportion of juvenile stock, circulation and seats is fairly constant for each population-size group. Both the bookstock and number of seats for children are slightly more generous than their proportionate circulation would justify. We have tried to relate seating to population, but it has been hard for libraries to obtain branch population figures and especially in a new area where there is no way to define the limits of the area itself, or to make the area correspond to ward or census areas for which figures exist.

EMPHASES IN BRANCH SERVICES

Circulation of fiction is greater in proportion to non-fiction and of juvenile in proportion to adult, at branches as compared with centrals, and at smaller branches as compared with larger. Reference service at branches is less in proportion than at central, but it may be extremely heavy. In modern branch libraries there is a rapid increase in reference work, with corresponding need for reference materials of all sorts, encyclopedias, handbooks, indexes, bound periodicals, vertical files. This is partly the outcome of a general trend among adults and young people to do more looking up and studying, but arises still more from the phenomenal growth of school reference demands. This im-

plies more stack and reading room space, and as noted in Ch. 14 and 16 may require an Intermediate or High School reference room or alcove, a point demanding careful study. There should be more 12-inch shelving for reference volumes, more filing cases, combined consulting shelves and tables for indexes, locked shelving for more of the stealable books, and more restricted or overflow shelving not freely accessible to readers, in basement, mezzanine, or rear wing. The old days of building up a purely circulating stock, of discarding everything that does not move rapidly, are gone.

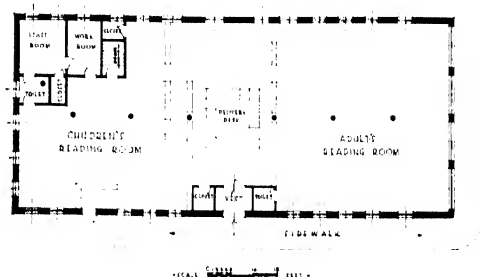
BRANCH PLANNING

The analyses of plans in Ch. 23 to 28 and the text of Ch. 12 to 20, contain discussions, examples and illustrations from many branches. From these and the checklists and area formulas in Ch. 11, it is hoped much help may be derived.

SCHOOLHOUSE BRANCHES

This topic is beset with so many difficulties that a committee, appointed in 1926 by the A.L.A. to consider the feasibility of placing public library branches in schoolhouses, gave up the problem and never reported. However, an understanding of the principles involved is vital to decisions on

Arnett Branch, Rochester, in rented storeroom. Has large show windows in adult room, facing the main street, at right of plan. Entrance for adults and children is halfway along the side street, and location of desk enables staff to supervise the long rectangle. Children's exit is further from the main street. Low bookcases give maximum light. An entrance from the main street would be more inviting but less workable, for the adult readers would be disturbed by those passing. Stock 18,000 vols. Circulation 175,000. 4000 sq. ft. of space.

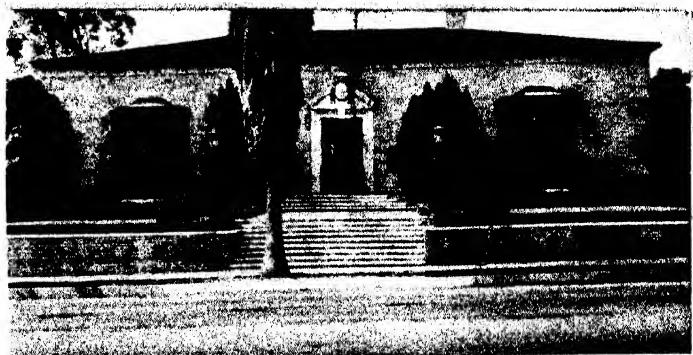


branch buildings and schoolhouse additions. The purpose of a school library is quite different from that of a public library branch. The first provides material required in the school curriculum and aids the school faculty in its use; the second serves all ages with all sorts of printed material with no special emphasis on school work, since adult reference work and general cultural reading are equally its goals.

The contrast is perhaps clarified by imagining a combination school library and public library branch operated as a school library during school hours and as a public library the rest of the time. As a school library it would be an important unit in the teaching process, perhaps with classes or platoons scheduled in the library room for their assignments of reference work. The book collection and the emphasis of the staff-work would be based upon the curriculum. The librarian would give primary attention to reference work and to assembling books, maps, pictures, pamphlets, and other vertical file materials, called for by the curriculum. She would be in constant touch with the plans and needs of each teacher. Recreational reading though important would be secondary to school purposes. The pupils would naturally be disturbed by having adult readers using the room during school hours.

When the bell rings for afternoon dismissal the "school library" would blossom into a "public library." The school librarian would be replaced by another person whose training and purposes would be quite different. While she

Hill Avenue Branch, Pasadena, Cal. One of the most interesting of the long low California type. Perfect contrast of form. Avoids a rigid symmetry by the dissimilarity of the two wings and the studied composition of the planting, horizontal opposing vertical, unbroken lawn opposed to massed planting, plain wall surface in contrast to detail in the openings. Murston and Maybury, architects. 1925. Ralph J. Wyatt, photo.



Santa Catalina Branch, Pasadena, Cal. Exquisite balance and contrast of form, texture and scale. The unfortunate necessity of the raised terrace and many entrance steps is turned to good account in the composition. Murston and Maybury, architects. 1931. Ralph J. Wyatt, photo.

would attempt to answer reference questions and provide material for pupils' school work, she would be primarily interested in their individual out-of-school reading, their hobbies or personal projects, their ideas and ambitions, and the general cultural reading which they might enjoy on their own. But she would be equally interested, perhaps more so, in the adult use of the branch, the reference work and book needs of men and women. She would feel it her obligation to develop both adult readers and pupil patrons.

If it were a high school, a new problem would enter with the pupils' demands for adult fiction and their temptation to use altogether too much of it in competition with books which should be read for school purposes. There would be a conflict between the interests of the school pupils and those of adult readers in the neighborhood.

Therefore the inclusion of a real public library branch in a schoolhouse is dependent on the adjustment between these purposes. It may appear economical to take advantage of school



Mark Twain Branch, Detroit, departs from the stereotyped appearance and arrangement. Its two major reading rooms are accented by windows of unusual height. (See Ch. 28 for plan.) O'Dell and Rowland, associate architects. 1940.

housing to provide a public library branch, but if it will not be used by as many adults as elementary and high-school pupils, the library is not emphasizing its proper function of serving all.

The arrangement of a schoolhouse branch library⁵ depends greatly on its location in the school building. It should be on the first floor with its own entrance direct from a very busy street, so that adults will use it heavily. Generally it will occupy the space of one, two, three, or four class rooms, the partitions omitted. For such a long narrow space, the single public entrance should ordinarily be near the center in order to permit the best supervision and reduce travel within the room. Conferences should be held between school and library officials to insure that the dual purpose of such a room is understood and provided for as well as possible, both in its arrangement and operation. At Grosse Pointe, Mich., in 1938, "the Board reconsidered and located the new junior high school on a main thoroughfare with a separate wing for a branch of the public library, which will not be connected with the school. There will also be a school library in the building."

This complicated subject has led to controversy in many communities over the seemingly good argument that there is no need for two li-

braries which could be combined into one.⁶ This is true to only a slight degree if old and young are to use the schoolhouse branch as they should. Also few school buildings are located to meet the requirements set up above. One of the good examples is the Briggs Branch at Trenton, shown here. Under the best conditions conflicts are sure to arise between school and library officials. In several cities, *e.g.*, Pittsburgh and Cleveland, all the school libraries are operated and supervised by the public library under a general contract between the two organizations, intended to avoid disputes about general policies. No one would be quicker than these librarians to point out the great and growing distinction between the school library and the branch public library. See Briggs Branch plan, p. 377.

STORE AND TEMPORARY BRANCHES

The use of ordinary store space for temporarily housing branches is quite common and has

⁵See L. F. Fargo, *The Library in the School*, 3d ed. rev., Chicago, American Library Association, 1939, for the planning and furnishing of a school library.

⁶J. E. Wert, "Effectiveness of the public-school-housed library branch," *Lib. Quart.*, 7:537-45, Oct., 1937. This, like several other articles, indicates little awareness of the intensive type of work handled in the effective school library. See also H. L. Cecil and W. A. Heaps, *School Library Service in the U. S.*, pp. 215-221; also consult index and footnotes. N. Y. Wilson Co. 1940.

many advantages.⁷ It is an economical way to try out a neighborhood that is developing or changing, before committing the taxpayer to a permanent building. A number of such experiments have resulted in locating later buildings elsewhere, as in San Diego, Oakland, and Milwaukee. But it is hard to abandon a branch location when the time comes for a sensible move; the neighborhood will protest loudly.

Rochester, N. Y., has been through an extensive experience.⁸ Most of the Rochester rented store buildings were planned especially for branch use, but as this was to be temporary they are by no means ideal, nor sound investments. The owner provides painting, plumbing, light fixtures, and furnace independent of the rest of the building. The shelving, furniture, and linoleum is provided by the library which has a five-year lease, with renewal privilege. The total building rental is one tenth the cost of the building.

CHILDREN'S BRANCHES

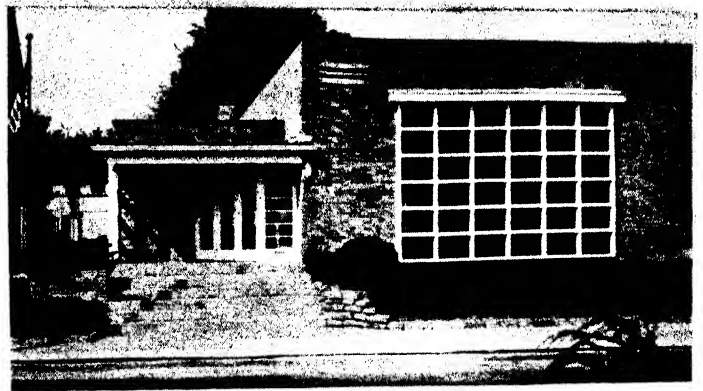
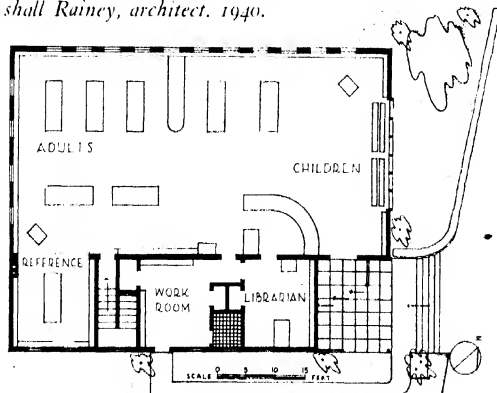
The Brownsville Branch at Brooklyn, the Boys

⁷L. J. Bailey, "Branch libraries in temporary quarters," *Lib. Jour.*, 48:1053-55, Dec. 15, 1923.

⁸W. F. Yust, "Rented branch quarters in Rochester," *Lib. Jour.*, 48:317-18, Apr. 1, 1923.

⁹P. I. Field, "The work of a regional branch," *Lib. Jour.*, 56:151, Jan. 1, 1931.

Oakley Branch, Cincinnati. First floor plan. Of the simplest and most economical type compatible with good service. A single reading room. Excellent relation of desk and workroom for time-saving with supervision. Basement under the smaller rooms only. T. Marshall Rainey, architect. 1930.



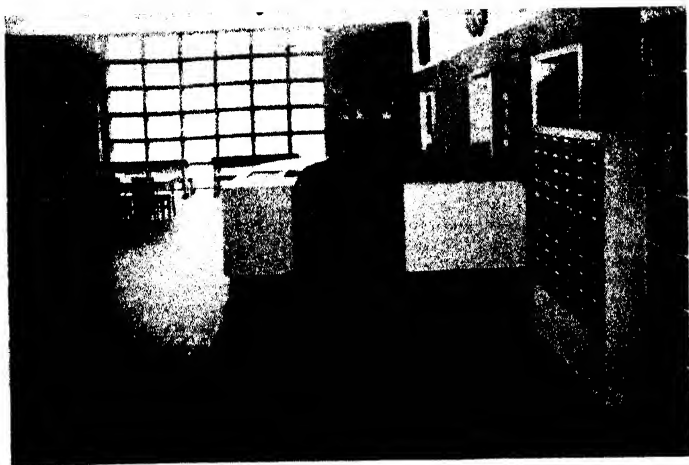
Oakley Branch, Cincinnati. Designed in the modernistic manner, vertical and horizontal lines predominating. Walls of 4 in. brick veneer on 8 in. terra cotta blocks exposed inside and painted. Terrace and steps necessitated by ground higher than street level. T. Marshall Rainey, architect. 1930.

and Girls House at Toronto, the children's branch at Pasadena, the Children's Library at Westbury, L. I., are almost the only examples of complete segregation of young people. The Westbury building had a special origin; it was given as a memorial by a donor to whom the interests of the children appealed powerfully. At Brownsville the idea originated from overcrowding at another branch.

The idea of segregation may appeal to some adults who resent the sight and sound of the youngsters, or to librarians who like to keep their own work, adult or juvenile, "to themselves." But many librarians, including children's librarians, regret that young people should be separated from all of the books adults use, especially non-fiction and reference books, or be made aware of a break between their present and future use of the public library. For this reason separate children's branches will no doubt continue to be few in number.

REGIONAL BRANCHES

When the depression came several of the largest cities were considering the idea of a few very large branches in various major regions or districts which would serve as "centers of supply and advisory and supervisory direction for the smaller and less efficiently equipped branches, deposit stations, business-house deposits and schools, to give more intensified and specialized service, to keep in touch with headquarters and to concentrate on the entire work of the district."⁹ This method of organization was initi-



Oakley Branch, Cincinnati, reading room looking toward front of building. Large obscured glass window to floor, elsewhere wall shelving is unbroken, with band of windows above it. Economy in design and structure made possible the acoustic tile ceilings; good furniture, hardware, plumbing and heating system; built at the remarkable cubic foot price of 28 cts. for building only, or 40 cts. including equipment and fees. Perhaps too cheaply built, e.g., the 3-ply wainscot may be affected by climate. No plaster; asphalt tile flooring; effect through color, dull blue, brown, cream and light-wood tones predominating. T. Marshall Rainey, architect. 1940.

ated at Chicago's Legler Branch in about 1920 and has proved its effectiveness. Legler's circulation runs over 600,000 annually, and of the eleven branches it serves, seven circulate a total of about 2,000,000, the total circulation for the whole area being about 3,600,000. Obviously, the problem is peculiar to very large cities. In Chicago it grew out of the marked inadequacy of nearly all the 45 neighborhood branches. In ordinary cases, centralization is in general more effective and more economical than decentralization, both as to supervision, bookstock, and services.¹⁰ In cities of less than 500,000 population, little is accomplished by splitting up stock and staff to cover divisions of the area. Books may be sent almost as quickly from central and there is more likelihood of finding a copy of a book in a large central branch collection. The staff, in turn, may better be split among specialized activities for the whole city than be duplicated on fewer specialties.

Various discussions on this subject indicate a confusion between the purpose of the real regional library like the Legler Branch, and the desirable purpose of a few very large general branches in cities of 200,000 or 300,000 population. It has become apparent that many branches of small size distributed over a whole city are

less efficient than a few large branches located where a larger patronage is likely to develop. But this is not the regional idea just outlined, and in studying a local problem the distinction must be noted. The effective use of the book trailer-truck for serving outlying sections has become a definite factor in deciding on a policy for small suburban branches.

The Legler Branch, because of its regional obligations, resembles in many respects a large central library. Its book storage is larger than normal. The extensive steel main floor stack is duplicated on a mezzanine level and the high and spacious basement houses a school deposit collection of 200,000 additional volumes in a large number of steel bins. These are serviced at a long steel shipping table through the center, and by an electric conveyer which carries the boxes from the basement to the delivery truck in the rear alley. Staff workrooms and offices are much more elaborate than in an ordinary branch. Cataloging is carried on here for this busy branch itself and for the smaller branches in its area. The schools division, serving the entire city from this building, keeps its records here, as do the travelling libraries for station deposits. The north and south reference rooms on the second floor have not yet been utilized by the public, being used temporarily for PWA classes, school collection overflow, etc. The room labeled "Catalog Room" is the general workroom for all purposes. The Legler branch activities include the promotion of work with schools, colleges, clubs, reading circles, foreign groups, the blind and other special groups, not only in its own neighborhood but in the subsidiary branches. See also four large Detroit and Washington branches, not regional, pp. 280-283.

LOS ANGELES BRANCH DETAILS

Los Angeles, in a booklet published in 1928, describing and showing drawings of its branches, included a check list of points which we present. We question the half-mile service radius recom-

¹⁰C. B. Roden, "The Legler regional branch," *Lib. Jour.*, 46:551-52, June 15, 1921.

mended and the necessity for a club room on the main floor. In the Los Angeles branches a general policy of interior design has been followed with certain predetermined essentials and non-essentials. The smaller and less expensive type of building has been adopted with the thought of giving each branch a service circle of a half-mile radius. Quoting the booklet:

"The minimum *book capacity* which will allow a branch to supply the normal community needs is estimated at 10,000 volumes. Stack space should allow for an expansion of the collection to practically 20,000 volumes. This allows for generous growth, as fifty per cent of the collection is usually in circulation. In most of the new branches stack rooms have been arranged so that a second floor may be added for later expansion.

"Experience proves that it is poor economy to build a branch library without a small *club room* for story-hours, school classes and neighborhood, civic or cultural gatherings. However, it is no longer considered necessary to provide a large assembly hall with stage and dressing rooms, as the public schools are now well provided with auditoria.

"*Staff quarters* must include a workroom as close to the charging desk as possible, a librarian's office where quiet may be secured, a rest room equipped with couch, table and easy chairs, and a small kitchenette which contributes much to the comfort of the staff member, each scheduled at least two nights weekly.

"Practical economy is found in *built-in* supply cupboards, book shelving in the workroom, a poster case, a wall safe, staff lockers, china closet, cold cupboard and dining nook. Shelving is provided in the club rooms also for extra supplies or little-used books.

"Although each building must be adapted by the architect to the site and locality chosen, most of the Los Angeles branches conform to one of *three types of plan*: the rectangular, the outer L shape, or the inner L shape.¹¹

¹¹We show and analyze many of the plan-arrangements in Chs. 24 and 25, but we disagree with the grouping by the three types mentioned here.

"In every case, the charging desk is placed as near the entrance as possible for supervision of the exit. In the new buildings the basement has been practically eliminated. A small underground space is all that is needed for the gas furnace, the hot-water heater, and the storage of wood for the fireplace. The glass partitions between charging desk and reading rooms, considered essential for quiet in the older libraries, have been found unnecessary."

SPECIFICATIONS

The Los Angeles branch specifications for buildings are most helpful; they may be found in D. Q. McComb's *Public Library Buildings*, Los Angeles, 1935, and may be bought, 1930 ed., from the library for \$2.00. Several detailed plans of Los Angeles branches are included.

Toledo's West Toledo Branch has elements of unusual merit but any borrowed specifications must be carefully modified and brought up to date. A check list of items not to be overlooked in the planning and construction of any branch is given in Chapter 11. Use table of contents and index of this book to trace other information.

FURNITURE

A valuable schedule for branch equipment, prepared by the late Helen T. Kennedy, at one time in charge of branches at Los Angeles, would be reprinted here if space permitted. No plans or specifications should be finally approved until checked with it. See *Lib. Jour.* 50:157-162. Feb. 15, 1925.

REFERENCES

- R. A. Ulveling, Administration of Branch Systems. In Joeckel, C. B., ed. *Current Issues in Library Administration*, pp. 135-62. Chic. A.L.A., 1939.
- Detroit Public Library. *New Branch Libraries, 1915-1922*, 19 p., 1922.
- Los Angeles Public Library. *Handbook of the Branches*, 64 p., 1928. 50 cents. Shows pictures and plans of 34 branches.
- Newark Public Library. *The Nine Branch Libraries*. 52 p., 1930.

CHAPTER 37: THE STRUCTURE: A CHECK LIST OF MISCELLANEOUS DETAILS

A TREATISE ON building construction is quite outside the limits of this book, but in a library certain elements in structure and equipment demand special consideration, so a brief discussion of them is justified. This chapter may also serve as a check list of details frequently overlooked.

1. *Dry Basement.* Since maximum use of the basement is characteristic of American libraries, special care must be taken to keep it warm and dry. (See Ch. 20 for basement utilization.) This use is logical since the crux of library planning is the full utilization of all space close to the central desks. The basement floor is closer to the desks than even the second floor, since basement-story height is normally less than first-story height. Its importance is therefore obvious. The Carnegie leaflet stressed this (See Ch. 1 and Ch. 23) and advised raising the first floor well above grade for light and ventilation of the basement. Through improvement in artificial light and ventilation, these benefits are now being attained in buildings whose main floors are near ground level; but with the basement deeper in the earth, its problems of waterproofing and dampproofing are increased.

Its floor and walls must be *waterproofed* to make it like a watertight box sunk in the wet earth. This is assured by either the membranous or the plastic method. The first is a membrane in the wall and under the basement floor composed of several layers of rag-felt mopped together with asphalt; the second a plastic coating trowelled against the inside face of the wall and over the surface of the cellar floor, composed of cement, sand, and another ingredient such as iron filings that fills the pores solidly. Each has its advantage. The plastic method is growing in favor, for the material is exposed to view and any weakness can be seen at once and corrected. It

should be laid by a firm which specializes in it and guarantees the result.

If there is a dry, well-drained soil, a *damp-proofing* by the integral method, or by mopping the outside of the wall with asphalt, may suffice. In the first, a special paste or liquid material is mixed with the concrete that forms the wall itself.

With any method there is a possibility of *condensation* of water on the basement walls. They are chilled by the cold damp earth against them and in turn chill the contiguous air and cause it to deposit its moisture on the walls, for warm air carries more moisture than cold. It is not unusual to see this wet running down the wall and forming pools of water on the floor. Yet the wall may be perfectly watertight.

This can be cured in three ways: first, by insulating the walls so the heat of the inner surface cannot rapidly escape to the cold earth beyond; second, by air movement that does not permit it to lie stagnant against the walls and so have time to condense; and third, by reducing the moisture content in the air.

Usually these cures are combined. Insulation is generally in the form of terra-cotta "splits" laid up against the wall. In the Brooklyn Central stackroom a 3" terra-cotta partition is built clear of the wall. In Concord, N. H., where there was a serious water problem, the wall was waterproofed on the inside face by plastic Ironite cement left exposed so any water-leakage could be detected and cured. Whether air movement keeps the wall dry remains to be seen; if not, it will be protected as at Brooklyn by a terra-cotta partition, with "weep holes" through the terra cotta at the foot so any possible moisture may drain out on the floor; but no holes at the top lest a slow current of the inside air might deposit water on the outer wall. In some of the

larger libraries (Baltimore, Toledo) a passageway for pipes and ducts against the outside wall protects the bookstack from this condensation. A storage vault built against an outside wall is dangerous even though mechanically ventilated.

2. *Drainage Levels.* As in any other building, the level of the street sewer must be considered and all fixtures set above it. Pumping toilet drainage up to the sewer should be avoided. If there is possibility of the sewer flooding and backing up, check-valves are required. Floor drains, though required in the boiler room, are avoided where possible, since they usually imply a sump and sump-pump, with added cost and care.

3. *Flooring.* For reading rooms and circulation rooms the ideal floor is soft and quiet to the tread, resists denting by furniture, has a long life, is pleasant to look at, and easy to keep in condition. Heavy rubber tile seems most nearly to meet these conditions, the marbleized patterns showing footprints least. Heavy linoleum (6 mm. thick, made only in Battleship, *i.e.*, brown color) has probably a shorter life, is not so resistant to denting by furniture, is negative in appearance, but costs less. Cork tile is softer and quieter but is more easily damaged, difficult to maintain, and shorter-lived. Cork carpet is the softest and pleasantest to the tread but has the shortest life of all and looks somewhat shabby. Most modern libraries select rubber tile as first choice and heavy linoleum as second, when costs must be cut.

For workrooms, 6 mm. linoleum is most used; for offices, rubber, linoleum (either 6 mm. or 3/16", plain, jaspé, inlaid, or tile), wood, or broadloom carpets.

In large libraries the entrances, lobbies, large halls, or even a large circulation room may be paved in marble or terrazzo (marble chips mixed with cement, and polished after laying, divided into sections by brass strips). These are used wherever great dignity of expression and a sense of permanence are desired and the noise of footfalls is not a detriment. They lack warmth of expression and are unsuited to a library read-

ing room or workroom, for they have no softness, elasticity, or sound-absorption value.

If severe cost-cutting is necessary, 3/16" asphalt tile may be used anywhere, but it is a rather hard floor and therefore somewhat noisy, accentuating the click of heels.

For the bookstack, 1/8" asphalt tile; preferably light in color, if sufficient funds are available; if deck construction is of concrete and funds are still more limited, the cement finish of the concrete can be painted, but will need repainting periodically.

For shipping rooms, the softer types of asphalt mastic flooring are best if heavy use is expected. This non-slip flooring is especially valuable on ramps. Over a cement floor next the earth, as in an ordinary basement, asphalt tile in the darker colors and asphalt mastic are the only resilient floorings that will stay in place. Light-colored asphalt contains materials which preclude permanent adhesion. Asphalt tile, being very cheap, is sometimes set as a foundation and insulator for linoleum, rubber, or one of the other floorings.

Outer vestibule floors should not be of rubber, for it is slippery when shoes are wet, nor of linoleum or cork, for they are perishable. Marble is rather slippery; terrazzo can be made with carborundum grit to avoid this, but hard tile is often used, sometimes the red square "quarry" tile, or one of the special anti-slip tiles. If funds are low asphalt tile can be used, for it is not slippery where wet.

For toilet rooms and slop-sink closets the ordinary small ceramic tile is almost universally used. It is made in white, black and various colors and in 1 in. squares or 1 x 2 in. rectangles. It can be cheaply laid, for the tile as sent to the building is pasted upside down on great sheets of paper, all properly spaced, in checkerboard or other designs. After laying, the paper is washed off. Any glazed tile is to be avoided, for it quickly becomes shabby when used as a floor.

A cement floor or concrete floor (names for the same thing) is the cheapest of all floors in a fireproof building. Fine gritty particles are apt

to be rubbed off by walking, "dusting," as it is called. To prevent this the cement is treated with a "hardener" either before or after laying, or painted after it is perfectly dry. Dampness coming through the concrete will loosen the paint, and any free alkali will change most paints into a froth. Ordinary house paint is susceptible to this; special concrete floor paint should be used, but only where there is no danger of moisture from below.

Asphalt-base or bitumen paints are black and probably resist moisture the best; rubber-base and oil-and-pigment paints come in varied colors, but the warm grays or light stone colors are the most satisfactory as they show wear the least. In bookstacks the tone should be quite light to help illuminate by reflection the backs of books in the lower shelves.

There is constant experimentation and development of floor paints.

4. *Costs of Flooring.* The various floorings, their composition, advantages and disadvantages, care and maintenance, types, thickness, principal manufacturers, and trade-names, are admirably covered in Miss Plaister's valuable booklet,¹ which supplements our necessarily brief discussion. Costs are not quoted in it, but we consider them so important to anyone selecting floor coverings that we venture to approximate them with the warning that *prices vary with local and temporary conditions* and are introduced here only to give a rough basis of comparison. Unit costs are affected by the quantity of flooring involved (reduced rate for greater quantity), by local wage scales, accessibility of the building, shapes of spaces to be covered, the amount of fitting around columns and other interruptions, and the amount of work the contractor happens to have on hand.

The following figures represent the costs of flooring per square foot, over and above the costs of a smooth cement underfloor, assuming favorable conditions and a fairly large area to be covered. Smooth cement is required under all resilient floorings and can be used as the final floor. Terrazzo, tile and marble do not require

it; they are laid on a bed or fill of lean concrete, saving the cost of the smooth or trowelled cement upper layer; credit for this is allowed for in these figures:

	<i>Cost per sq. ft.</i>
<i>Hard Flooring:</i>	
Painting cement with bitumen, two coats	\$.02
" " " oil paint " " . . . .	.03
Terrazzo, all colors, brass strips . . . . .	.35
Ceramic Tile (toilets, etc.) . . . . .	.40
Quarry Tile (large heavy tile, usually red) . . . .	.60
Marble (Tennessee 7/8 in.)	1.20
<i>Resilient Flooring:</i>	
Asphalt Mastic, sheets or rolls . . . . .	.14
1/8 in. Asphalt Tile, dark colors (in stock) . . . .	.12
1/8 in. " " light " " . . . . .	.16
3/8 in. " " dark " " . . . . .	.14
1/2 in. " " light " " . . . . .	.21
Cork Carpet, brown or green (1/4 in.) . . . . .	.22
1/8 in. Linoleum, plain or jaspé . . . . .	.21
6 mm. Linoleum, made in brown only . . . . .	.25
1/2 in. Cork Tile (including finish) . . . . .	.43
1/4 in. Rubber Tile, all colors . . . . .	.60
Heavy pile Carpet (Broadloom) over Ozite . . . .	.80

5. *Floor Design.* In designing marble, terrazzo, inlaid linoleum, and sometimes other floors, there is a temptation to develop a design or border around such fixed furniture as a circulation desk or a line of bookcases that divides two reading spaces. This should never be done, for it often happens that such a desk is enlarged or its position changed, bookcases moved, the entire equipment of a room readjusted, or two spaces thrown together. Except for structural outlines and perhaps the face of wall shelving, there are few installations not subject to change, and complete flexibility is a great asset.

6. *Base.* Where there are resilient floors, the proper base along walls or bookshelf fronts is difficult to determine. Wood, though least expensive, quickly acquires the familiar dark discolored smear from mop or brush, exaggerated when either water or oil is used in cleaning the floor.

A base of linoleum or thin black rubber is growing in favor, 1/8" thick by 4" or wider, glued to a soft wood backing, but it must be care-

¹Cornelia D. Plaister. *Floors and Floor Coverings*. 75 p. 1939. A.L.A. 75 cents. Contains a selected bibliography, including material on janitor's care of floors.

fully set with casein glue, or better, phenol glue and the wood backing must be smooth, even, perfectly rigid, and with no "spring" where the ends of boards join. Manufacturers of library furniture led the way in this construction. Rubber is better than linoleum and slightly more expensive. In either case the top edge should be covered by a wood or metal moulding which may be finished flush with the linoleum or rubber.

A black Formica or Micarta strip makes an excellent base, though more expensive. In rooms with linoleum or rubber base it may be used on doors as a kick-plate. Casein glue should be used.

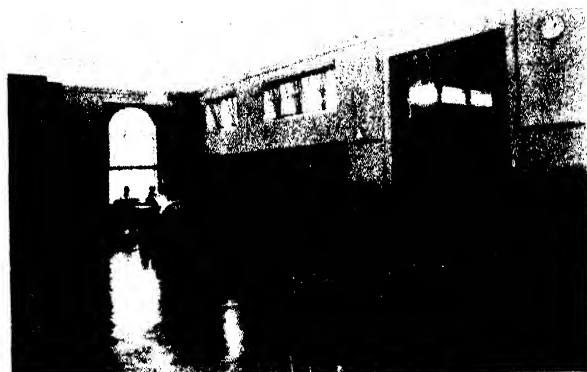
A moulded "sanitary" rubber base 6" high, $\frac{1}{8}$ " thick, rounded in at the top, and out at the bottom to meet the flooring, avoids dusty corners. It is now made by the rubber-tile-flooring manufacturers. Cost is slightly more than the strip rubber with wood moulding. (See Bookcase details. Ch. 41.)

Marble or terrazzo floors seem to demand a marble base; black marble usually the most effective. A magnesia-stone, slate, or cast terrazzo base is somewhat cheaper.

A "sanitary" tile base is made that matches quarry tile.

7. *Wainscot.* Wherever the public has free access dirty handmarks are inevitable; so plaster should not extend down lower than four to five feet from the floor. Vestibules, entrances, stairways, or other places where there are no bookshelves may be wainscoted in wood, tile or marble if the position warrants it. Panelled wood wainscot is losing in favor, laminated plywood in large sheets replacing it. (See illustration of Skinner Room, Ch. 14.) It consists of three, five or more sheets of wood glued together and dried under high pressure, the grain of the sheets reversing each other in direction. Swelling, shrinking and warping are much reduced. Single sheets 4' x 8' are possible. The usual stock size is 3' x 6'.

Five ply, $\frac{1}{2}$ " thick, should be used except for small areas. Cost varies with the wood, from fir at 12 cts. per sq. ft. and straight-grained white



Memorial Library, Roselle, N. J. Panels above bookcase height are of 5-ply Duali Philippine Plywood about 30 cents per sq. ft., therefor cheaper than oak. The new laminated woods made up with the new waterproof glues (e.g., Weldwood), at a cost of about 10 cents per sq. ft. additional, will resist rains that blow through clerestory windows. Note shelving recessed into wall. Alfred Morton Githens, architect. 1937.

oak at 40 cts. per sq. ft. to various imported woods at high prices. Fitting in place, staining, and waxing would at least double these figures. An additional 10 cts. per sq. ft. is charged if waterproof phenolic resin glue instead of the ordinary casein glue is used in making up the material. Fir, decidedly the cheapest, commonest, and with too strident a grain when stained, was used with remarkable success at the San Francisco Exposition, 1939-1940, finished only with white paint rubbed off to show the grain slightly, and a light waxing. This attractive finish would discolor if within reach of moist hands.

8. *Walls with Bookcases.* The bookshelves of reading and work rooms form a natural wainscot; any blank spaces may be lined with laminated wood.

The bookshelves were formerly set against the plaster wall, the plaster behind the shelves painted a dark neutral color, brown or gray. Now they are backed with hard, smooth, $\frac{1}{4}$ " thick repressed fibre-wood such as Tempered Prestwood, or "tempered hardwood," which requires no finish and costs about 8 cts. per sq. ft. This braces the bookshelf construction, gives a smooth dark background and costs little more than the last coat of plaster (white coat), omitted when fibre-wood is used. The wall is

usually carried straight up from behind the bookshelving, but is sometimes furred out to the face of the bookshelving to eliminate the dust-collecting top. The lamps and reflectors of an indirect lighting system occasionally are placed on the top of the bookshelving. (Petworth Branch, Washington, D. C.). The upper wall is usually finished in hard plaster, but if the ceiling is not too high may be lined with battened boarding, or laminated wood with V-cut joints.

Bookcases, double or single-faced, either open above or glazed to the ceiling, should be used in preference to plaster partitions. The more easily the building can be rearranged the better. Standard unit office partitions, either in wood or steel, would be the next best; then plaster block, terra cotta, and concrete block, in order named; brick most unfortunate of all. If the flooring is carried through under bookcases and light partitions they may be moved when desired.

The glass screen above the bookshelving can be framed in dull chromium-plated brass tubing; it is slender and tones in well with a light ceiling. Wood should be light in color to avoid the effect of a strident cross-lining when silhouetted against the ceiling.

It may not be necessary to carry the glass more than 4' 6" above the floor, sufficient to intercept the sound of conversation between seated persons. Sheets of plate glass, like those in the modern bank screen, may be supported only by the dividing uprights with no cross piece above them.

When there is cross traffic through a room, it is wise to cut off the noise and confusion by such a low bookcase, glazed above.

9. *Ceilings.* The design, the lighting system, and the acoustics must be considered together. A dark ceiling, low in reflecting quality, precludes indirect lighting. One broken up with beams and girders improves acoustics. An open timber roof may obviate the need of any special acoustic treatment (Riverside, Ill.; most of the Southwestern branches). A curved ceiling, particularly if in plaster, may focus echoes and especially require acoustic treatment (Roselle,

N. J., where entire area is finished in acoustic plaster). A hard plaster ceiling, pure white without gloss, has the highest light-reflecting and light-diffusing value, but has intense sound-echoing quality.

A light ceiling requires periodic painting if it is to be used as a reflector with indirect lighting, the frequency depending on the pureness of the local air and whether ventilation is by the windows or by filtered air through a duct system; a dark ceiling needs painting less often; a wood ceiling never. If the construction is of reinforced concrete, or concrete fireproofing over steel beams, smooth forms can be used and plaster omitted with considerable saving in cost, as at Los Angeles.

Design, a matter of esthetics, is outside this discussion; lighting will be taken up in Ch. 38.

10. *Acoustics.* With its many advantages as a surface material, its smoothness, cleanliness, and light-diffusing qualities, hard plaster is a bad sound reflector. To obtain a quiet room other materials that absorb floating sounds must be introduced in sufficient quantity on floors, walls, or ceilings.

Noise of footfalls, the worst annoyance in a library, is reduced by soft floor covering, usually rubber tile, linoleum, cork carpet, or cork tile, which helps to absorb floating sounds. Bookshelving and wood wainscot absorb sound to a slight extent. Curtains are very effective, but insufficient in area (Rochester, Riverside, Ill.). To remedy resounding walls in finished buildings, hang against the wall a long expanse of monks-cloth or other rough weave or heavy pile fabric, gathered in folds; this is highly absorbent.

11. *Acoustic Plaster* is fairly efficient in absorbing the usual sounds, but a large area of it is required. Its rough surface with irregular minute holes is inadvisable for walls, as in this position it collects dust and dirt. Its natural color is a grayish white, but any clear color is obtainable at little or no extra cost (cream, buff, clear blue, apricot, etc.); avoid painting lest the sound-absorbent quality be reduced, but if necessary use only the paint dictated by the manufacturer.

Light-reflective value is much below hard white plaster, even in the grayish-white, and much reduced in the other colors, an important matter if there is to be indirect lighting. Acoustic plaster must be at least $\frac{1}{2}$ " thick laid in two coats, replacing the final "white coat" of the hard plaster. Cost, about 10 cts. per sq. ft. above cost of hard plaster. A serious drawback is the difficulty of patching it. Every repair or patch will show unless the ceiling is painted.

12. *Acoustic Tile* consists of absorbent blocks cemented to wall or ceiling; some with rough surface, some with regularly spaced holes; grayish or oatmeal color; qualities like acoustic plaster, but much more sound-absorbent. It may be sand-papered after laying to hide the joints to an extent. Cost, about 25 cts. per sq. ft. more than plaster.

13. *Acoustic Pans, Units or Panels* are of enamelled metal with small regularly spaced holes, backed up with fibrous material, and set against wall or ceiling; very efficient acoustically; good for light diffusion; smooth; can be washed, though dirt in the holes is inaccessible. Cost, about 25 cts. per sq. ft. more than hard plaster.

The greater the area of acoustic material, the greater the sound absorption. Ordinarily there are choices: either covering a part of the ceiling, perhaps half its area, with the very efficient acoustic tiles or pans; or covering the entire ceiling, or at least the flat surfaces between beams, with the less efficient acoustic plaster. Results and costs are fairly even.

Typewriting rooms and catalog rooms should have ceilings and upper walls lined with acoustic tile or pans for the utmost sound absorption. Here workers are under concentrated pressure for the whole day and often overtime; quiet is essential. In a downtown location or on a noisy thoroughfare, reading-room ceilings whether in central or branch, should be acoustic-covered if it can be afforded.

14. *Relative Sound Absorption*. Each material

²Acoustical Materials Assn. *Supplement to Official Bulletin* No. 6, Chicago, 1939, 8 p.

absorbs a fairly definite proportion of ordinary indoor sounds and reflects the rest.

SUMMARY OF SOUND-REDUCTION COEFFICIENTS²

(These figures are approximate)

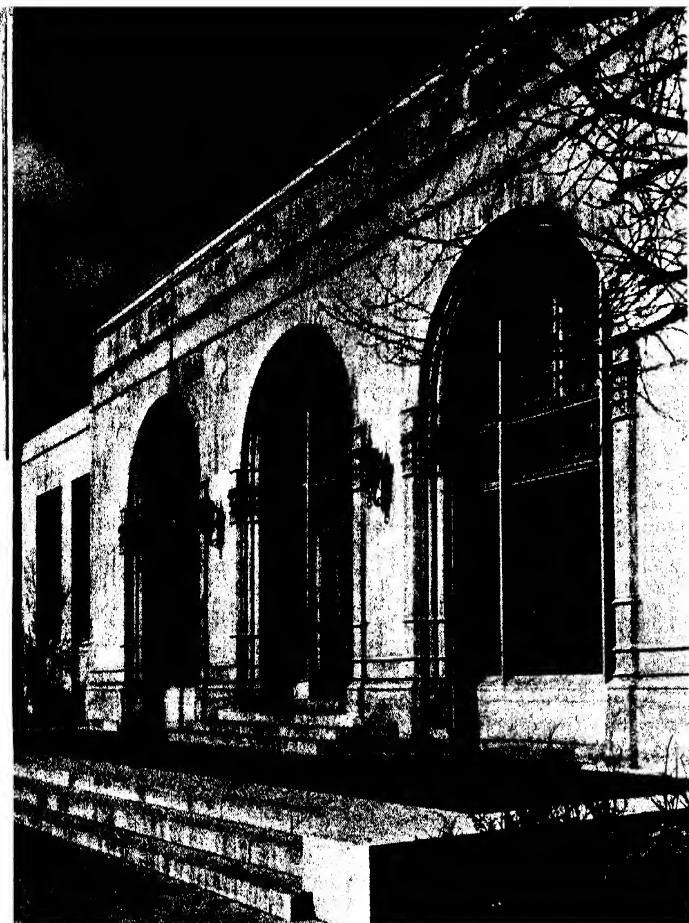
Marble or glazed tile.....	.01
Hard white plaster.....	.03
Rough plaster.....	.06
Woodwork.....	.06
Carpet, thick pile, felt lined.....	.37
Heavy draped fabric hung on wall.....	.57
Acoustic plasters $\frac{1}{2}$ " thick.....	.45—.55
Acoustic pans and tiles, $\frac{1}{2}$ " thick.....	.40—.55
1" thick.....	.55—.70
2" thick.....	.70—.85

fastened to the rough plaster or concrete

15. *Windows*. Library windows should have as much glass area as possible; for this, metal frames and sash are better than wood. Wide windows are more efficient than many narrow windows, for they let in the diagonal light rays. If the walls are thick, splayed jambs assist. Since some persons feel oppressed by a room in which no windows are low enough to see out of, one or two should be brought down close to the floor; preferably a wide window or a bay window at the end of the room. All weatherproof devices should be considered. For small libraries and branches in the North double or storm windows with weatherstripping are quoted as saving up to 25% on heat cost. See Ch. 38 for further discussion of windows.

16. *A Projecting Base* or water table on the outside below the windows, which children can climb or use as a runway, has proved a serious annoyance and should be avoided. Broad window sills are tempting as a perch or seat, so if the window has more than an 8" reveal and is within easy reach of the ground, the outer sill should slope sharply. Spikes have been tried but are dirt catchers, need repair, may stain the stone with rust, are frequently broken, and go far to destroy the graciousness and welcome that the library should express.

17. *Exit Door Control*. Building laws and common safety frequently require exit stairs that tempt the theft of books. They must be instantly



Carpenter Branch, St. Louis, showing avoidance of any base course or flat window sill where children might climb. Wilbur T. Trueblood, of Trueblood and Graf, architect, 1927.

available in case of fire. If doorways to these stairs are not controlled by a staff member, some device may be necessary to deter their abuse. Chicago University Library has a glass-fronted box over some of the doorhandles; the glass must be broken to open the door. Mt. Vernon connects the door to a large electric gong which resounds through the building. Toledo has found that a covered cord hung across the doorway is sufficient.

18. *Public Halls, Corridors and Stairs*, where talking is probable, should be cut off by partitions or glazed screens. If this is not practicable they should be floored and lined with acoustic material.

19. *Stairs* not partitioned off from other rooms should be covered with sound-deadening material. Make sure that stair approaches are

screened, with or without doors, to prevent drafts on workers sitting near by. Stairs to basement, particularly, should be placed so as to have supervision from some desk.

20. *Service Stairs* should not be wider than necessary. Short staff stairs from reading or workrooms to stacks need not be over twenty-four inches. Circular stairways should never be used.

21. *Elevators*. Public elevators are discussed in Ch. 12, stack elevators in Ch. 40. A good size for a public elevator is 6' wide x 5' deep, inside the cab. At least one staff elevator, automatic, quick-moving, 150'-250' per minute, self-leveling, with self-closing doors, indicators, and all safety devices, should be provided in every library building which has more than two floors or two levels of bookstacks, and carefully located at the point nearest the greatest number of person-trips that grow out of the day's work. A cab 3' 8" wide x 4' 6" deep in the clear, is a minimum for a book truck and two passengers or for the janitor's floor-mopping truck and floor-polishing machine. If to be used by the staff in numbers, *e.g.*, going to and from lunch, it should be larger: 25 sq. ft. is sufficient for a busy staff elevator. Freight elevators and those used for book trucks should have hardwood and rubber bumper strips to protect the cab and the trucks. Elevator cost, exclusive of shaft and penthouse, from \$4,000 to \$8,000.

22. *An Escalator*, or moving stairway, may be considered, but with its approaches and machinery it occupies considerable floor space. It is very expensive to install, though saving an operator's salary. Cost about \$25,000.

23. *Booklifts*, see Ch. 40. Approximate cost \$1500 to \$1800.

24. *Partitions* around service stairs, booklifts, etc., particularly in bookstacks, should not be thicker than necessary lest valuable floor space be wasted. One library was required by fire laws to use thick terra-cotta walls and heavy kalamain doors on booklift shafts, killing much valuable workroom space; a special ruling or ordinance would have obviated this technicality, for

the sheet steel shafts used by stack manufacturers would have been fireproof.

25. *Doors to Workrooms* should be light in weight; double-swing if possible, with vision panels and spring-checks. If single swing, the new light type of floor-check is preferable.

26. *Raised Door Saddles* should never be placed where book trucks will pass.

27. *Toilet Rooms* for the public in the average community should be obviously under staff control, with entrances well within the building, placed so that the circulation room must be passed before they are entered; or else locked, with key obtainable from the desk. Otherwise they will become a general public convenience with the damage and annoyance this implies. Unless the public feel they are under control they will break off handles, steal soap dispensers; the boys will climb from one enclosure to another, and swing on any rod or brace. All should be designed as near "rowdy-proof" as possible; e.g., push button instead of lever flushers, tops of men's stalls screened to keep boys from climbing over, ceiling lamps screened.

28. *Wash-bowls* desirable in each workroom where more than four or five are on duty, and in long workrooms every forty feet, for too much time is lost by going to a toilet room.

29. *Toilet Room Equipment.* Consider types and location for public and staff: Soap, paper towels, sanitary dispensers, mirrors, a shelf for public to lay parcels on while washing, etc.

30. *Drinking Fountains* in or near each workroom, and a few accessible to the public. Water artificially cooled.

31. *Heat Insulation* of walls and open roofs or top-floor ceilings is important for fuel saving and summer comfort. Flat roofs are now being painted with aluminum paint to turn off sun's rays.

32. *Electric Conduits* should be sufficiently large for additional wiring that may be needed in the future. Underfloor duct systems are sometimes used in administrative or cataloging departments for desk lights or telephones, but they are expensive; e.g., Brooklyn Central Library.

33. *Electric Panel Boards* should have spare fuse blocks for one or two future circuits. One spare to 6 circuits is common practice; they are sometimes badly needed in rearranging the circuits.

34. *Clocks* in important rooms, not only reading rooms but workrooms and offices. Mechanism can be sunk in the wall, the clock face projecting an inch or so; gray-enamelled frame and dull chromium face suit most locations; separate numerals may be set against woodwork; "skeleton frame" where high against plaster. If local service is alternating current (A.C.), the clocks may be on a circuit directly connected to the main service. If direct current (D.C.), this is not possible; but the clocks may be electrically controlled through a master clock somewhere in the library, installed and serviced by Western Union and keyed to the clock in their local office, regulated daily from the U. S. Naval Observatory. Western Union provides the master clock and service for a small monthly service charge, \$1.00 to \$1.50, no matter how many sub-clocks are within the library building. Sub-clocks are furnished by the library. All the clocks within the library are self-winding, i.e., operated on dry-cell batteries and, being subject to the master clock, are also corrected daily.

35. *Telephones.* In a small library the installation is the same as in a private office, one or two trunk lines and several extensions to different rooms, all owned and installed by the telephone company. The library merely installs the empty raceways. The company makes a monthly charge for the main line and for each extension. One room can call another by a supplementary signalling device without charge.

In a large library the monthly bill for all extensions required for communication between departments would be prohibitive. Accordingly, the telephone company's system is used only for outside calls and is supplemented by another system for indoor service only, installed and owned by the library, called the inter-communicating or house system. There can be as many as 24 stations without a switchboard; one station

calling another by dialling or pressing a button. If there are more stations, an automatic switchboard can be installed, without need of a switchboard operator. The system can be operated on a battery which is kept charged through the electric lighting system.

The outside system of a large library has several trunk lines leading to the switchboard, and branches from the switchboard to all rooms that require outside connections. The switchboard operator is a member of the library staff and can carry on clerical work between calls.

At many stations inside the building there are two instruments, one for the outside system and one for the house system, providing two outlets for communicating at one time and reducing the number of "busy" signals. Connections are made much more quickly by the house system.

Just how large a library should be, and how many stations needed, before a house system is advisable, is a question. The dividing line in public libraries seems somewhere near 50,000 population; in such cities there would be a separate children's room, catalog room, and reference room, each connected with the librarian and with the circulation desk. An inside equipment with 5 or 6 stations would be very desirable, if local costs for rentals and operation of the company system did not prove lower. The trustees must decide with the advice of the mechanical engineer. First costs and upkeep costs must be compared with public service companies' monthly charges for their extensions. There are many makes of house telephone apparatus, constantly being improved, and a discussion of them is beyond the province of this book.

At Baltimore, the Strowger P-A-X equipment has 115 stations (with capacity for 35 more), all connected with an automatic switchboard which on some days clears 1200 calls, sav-

ing an enormous amount of staff time. The maintenance and repair cost on this system is very slight, approximately \$225 per year, for labor and materials.

Before completing the plans, check all departments for adequacy of telephones.

36. *Electric Fans*. Check all work areas and groupings of desks to locate outlets for an adequate number of fans. Hung on walls, they save work space.

37. *Electric Signs* are appropriate for departmental entrances and should be designed with the building.

38. *Directory Boards* are necessary in larger libraries, placed on entrance lobby walls, carefully designed, possibly recessed, adequately lighted, perhaps with movable lettering.

39. *Directional Signs* over room entrances or on doorways, elevators, stairs, are most helpful. Several libraries number the open bookcase sections consecutively so that readers may be directed to "the third shelf of bookcase number 86."

40. *Cut Offs* for water, light, power, should be easily accessible to the staff and conspicuously labeled, so that quick action may be taken if the janitor is not at hand.

41. *Fire Extinguishers*. Check all locations, in proximity to each departmental control desk, near stairs, etc.; install an adequate number.

42. *Janitor's Ladders*, a movable knockdown platform for overhead work, mop wagons, floor-polishing machine, etc., should be given storage space at some point near a stair or elevator, quickly available to every floor level of the building.

43. *Grading*, top soil, planting, outside hose connections, should not be overlooked, nor a closet or storeroom near the rear entrance to house lawn and outdoor tools, hose, etc.

44. *Termites*, common in the South, are spreading through the North. Wood construction near the ground should be protected by metal aprons or impregnated. This is described in other publications.³

³D. Q. McComb, *Public Library Buildings*. Los Angeles, M. O. McComb, 1935. \$5.00

Injury to Buildings by Termites. U. S. Dept. of Agriculture. Leaflet 101. 1936.

CHAPTER 38: LIGHTING, NATURAL AND ARTIFICIAL

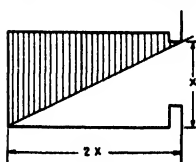
NO LIBRARY HAS BEEN bold enough to do away with natural light and depend on electricity alone. But the Treasure Room in the new Virginia State Library, with a generous provision for readers, is in the interior of the building and has only artificial light. It is said that Edison did all his study by artificial light. Library planning may change when electricity becomes much cheaper.

NATURAL LIGHTING

Since daylight is preferred, the more of it the better, within reason; an excess at certain times of the day can easily be screened off. All rooms where work goes on under natural light are generally assumed to require a total window area of not less than 20% of the floor area (some say 25% and even 30%), but advantages in plan-arrangement may justify a reduction in this percentage with greater reliance on artificial light. Order and catalog rooms where work is meticulous and constant should be generously lighted. Large trees or near-by buildings call for higher window ratios than the usual formula. If the walls are thick, windows should be wide or jambs splayed, for little diagonal light can come through a narrow window in a thick wall.



There is a good convention governing school-rooms, that the light-angle should not be less than 1 to 2, i.e., the distance from outer face of window opening to inner edge of floor should not be more than twice the height of the window-head from the floor. This is not so necessary for a reading room in a library, since readers can seat themselves in the light they prefer.



The upper part of a window is obviously the most valuable, for it lights the room on the farther side; the higher the window-head the better. Arched windows are ineffectual unless there is abundant window space, frequently the case in small libraries but not often in large. It is an unfortunate custom to keep the shades lowered halfway. Recently a librarian complained to one of the authors about the excessive bills for electricity. An investigation showed the shades two-thirds down at all reading-room windows and most of the electric lighting fixtures on, at high noon on a cloudy day. When the shades were raised and the lights put out, the readers expressed satisfaction. Such a situation is not unusual.

A light-colored wall opposite the windows diffuses the light and decidedly increases it where most needed. The modern tendency toward light woodwork and clear color has all in its favor and encourages the circumambient quality which natural light possesses and artificial light seems to lack. Light colors everywhere keep the light in circulation, dark colors absorb it.

This is shown in the following table of the reflective power of different colored walls, though it must be noted that all such tables are somewhat arbitrary, especially in the definition of the colors themselves. The figures are for reflection from tungsten lamps, but the same relative values hold for either natural or artificial lighting.¹

	<i>Per cent</i>
White (paper).....	80
Ivory white.....	80
Caen Stone (clean).....	78
Silver gray.....	75
Cream.....	74
Gray.....	19 to 72
Buff.....	55 to 64
Sage green.....	41 to 48
French gray.....	32 to 40
Tan.....	35

¹See detailed article in *Arch. Forum*, 56:634, June, 1932.



Mount Vernon, N. Y. Clerestory windows on the right, facing south. Circulation desk to the left. The original obscured glass proved too glaring and has been replaced with the new Ribbed Coolite glass, of a strong blue color. It has eliminated the glare. Acoustic plaster ceiling, clear blue. Hard plaster borders. Cross and Cross and Alfred Morton Githens, architects, 1937. Photo. Alfred Sands Githens.

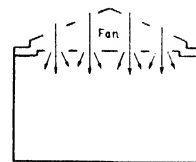
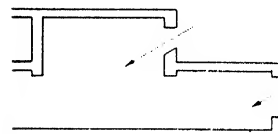
	Per cent
Light oak.....	32
Olive green.....	13 to 21
Dark oak.....	13
Dark blue.....	3 to 9
Mahogany.....	8
Walnut.....	7

Orientation is not often considered in library planning but it is important. North light is acknowledged best, east next, then south, then west; for in the early morning there are few readers and at noon the sun is so near overhead

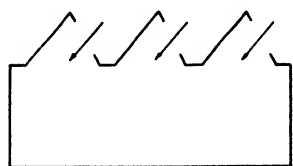
that it is not very troublesome, but the horizontal rays of late afternoon make reading difficult. The four recent branches at Tulsa, Oklahoma (Ch. 24), are glazed only toward the north, with louvred ventilating bands to the south for summer air currents. The Virginia State Library prospectus stated that the archives workroom, where material is carefully examined and repaired, must face north. Orientation might well be more carefully studied and taken into account in the purchase of a library site, though this is less important than general location and other matters discussed in Ch. 6.

Clerestory and skylight. Clerestory windows can be used to advantage for a very wide room or for an inner room that overtops the rooms adjoining (see Eagle Rock Br., Franklin Br., Mattapan Br. and Boylston Br.). Unless a clerestory faces north the sun's rays must be considered. The clerestory of the Brooklyn circulation room faces south; a continuous range of structural glass was chosen, for glass brick diffuses the light rather well. Roselle's clerestory, facing north, has clear glass. Mt. Vernon after various experiments reglazed its long south clerestory with blue Ribbed Coolite glass, curing a particularly vicious glare in mid-morning and mid-afternoon.

Although skylights are not used as often as formerly there is much to commend them, since technical developments have avoided some of their earlier faults. The upper skylight must be of especially good design, or it will leak and the glass will crack. The Wilmington-Baltimore-Rochester-Toledo type of planning requires them over the central circulation hall and they have been successful in these libraries. Horizontal diffusing sash below the skylight is customary, to form an air chamber as an insulator against winter cold and summer heat. This space becomes very hot in summer



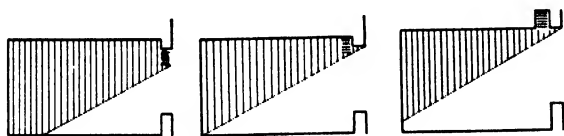
under direct sunlight and should be ventilated with an exhaust fan. Non-actinic glass may reduce the heat transmission slightly (Wilmington; Faneuil Branch, Boston). A special equipment, the "Ventilighter," like a horizontal Venetian blind above the diffusing sash, may be used to control the rays. Or if the upper surface of the skylight is not visible from the street, a summer coat of whitewash or cold water paint (*e.g.*, Muraltone) will suffice. The coating gradually wears off during the summer and the last traces can be washed off in October.



Over its cataloging room Rochester uses a "saw-tooth" roof with a series of studio windows facing north, an excellent

type copied from factory design.

Windows. Wood windows, double-hung or hinged, are still used in many of the larger libraries and most of the smaller; but metal windows are steadily gaining in popularity, partly because of their greater proportional glass area. Bronze, natural or white, is first choice, aluminum second, bonderized steel third. There are many matters to be considered, not peculiar to libraries, such as what is the proper section-weight; what portion of the sash can be fixed in place and what portions should open, should they open in or out, be hinged at top, bottom or side; should direct drafts be encouraged or avoided, a matter determined by the climate; is there proper clearance for insect screens and for the customary Venetian blinds; accessibility for washing, apparatus for opening and closing the upper sashes, etc.?



Windows should extend nearly to the ceiling; but the gathered slats of the Venetian blinds must not be forgotten, the "bundle," inevitable

when the blind is raised. If the blinds are set in the window opening, the bundle cuts off the most valuable light. The best position is against the wall above the window, unless a ceiling pocket can be arranged as at Brooklyn. Venetian blinds that lower into a pocket at the sill have not been a success. Roller shades in two parts, one above and one below, can be substituted if there is complete air conditioning and the sash is fixed in place or opened only for washing. For disorderly neighborhoods it has been suggested that the lower sash of a window near the ground be "fixed" (arranged not to open) so books cannot be passed out to confederates. The usual fly screens will serve the purpose. Either copper-bronze or the new white metal screening is standard. Library window detail requires careful study; since the library is staffed principally by women, the equipment must be not too heavy nor too stiff but must operate easily.

The height of the sills must be considered not only in façade design but in their relation to seated readers who may wish to look out, passers-by who may be tempted to look in, exhibits viewed from outside, radiators, conditioned air outlets, and bookshelves or built-in seats that may be placed under the windows (Ch. 37). Some librarians oppose bookcases under low-silled windows; others demand every possible foot of wall space for shelving. Sills may be raised to bookcase height and only a few low-silled windows retained to give a sense of space and serve as an antidote to claustrophobia.

New libraries are utilizing areas of structural glass to great advantage. They give pleasant diffused light and have high insulating value against cold and heat, but are inappropriate for buildings designed strictly according to historic style. The conventional wide wall-masses placed for exterior effect, particularly at the corners of a building, are apt to interfere with the usefulness of the interior. The obvious use of a window is to get light where it is wanted and if traditions of window composition interfere, traditions should give way.

ARTIFICIAL LIGHTING

Few existing libraries are well lighted according to the principles of artificial lighting now generally acknowledged. These principles are self-evident and simple but not easy to apply, and signal success in one particular generally leads to failure in some of the others. Disagreement concerning details has been so stressed that the whole matter seems complex.

This chapter will deal only with the light of reading rooms and workrooms, which present fundamentally the same problem and differ only in esthetic expression. Bookstack lighting is discussed in Ch. 40, exhibition-case and show-window lighting in Ch. 21. There are no other lighting problems peculiar to libraries.

Light Should Be Properly Distributed. The success or failure of the lighting scheme depends on the study given light-distribution. The system selected and the placing of the light sources are influenced by such factors as dimensions of room, color scheme, desired intensity, and position of reading tables and cabinets.

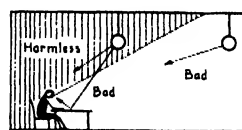
Light is needed first on tables or desks; second, on bookshelves, files and cases; third, for general illumination. Light on tables should be ample and fairly uniform; on shelves or cases, strong and even, so titles can be read easily. If this is assured, sufficient general illumination usually occurs through diffusion, particularly with light-colored ceilings and side walls. Where hooded table lamps are used, a supplementary system of lighting will be needed for bookshelves and for general illumination, *e.g.*, Wakefield, Amherst and Longmeadow, Mass.; certain rooms in Philadelphia and Cleveland, etc. There are few cases of hooded local lighting of wall bookshelves, for cost is high; *e.g.*, Aliquippa, Pa. The catalog in West Toledo Br. is lighted in this way. A dark corner or stretch of bookcases in shadow might justify such local lighting for daytime as well as night.

Most authorities agree that the sensory response of the eye is most satisfactory in a luminous environment similar to that found in nature. Therefore it seems logical to expect the eye

to operate most efficiently with the brightness ratios common in nature. Field and laboratory work seems to support this belief. It has been stated that "visual acuity is best when the luminosity of the surroundings is about one half of the central area under observation, and should not drop below one tenth of that."² In applying the principles of controlled brightness ratios to library reading rooms, lighting engineers insist upon fairly even diffused lighting without strong contrasts throughout the room, though somewhat brighter lighting on all the table tops or "working plane."

This is the consensus of opinion. However, we are inclined to question whether a bright table-top in a much darker environment is detrimental and we believe that too much relative importance has been given to general diffusion and too little to the harmful light that shines in the eyes and does not illumine the book, a vicious form of glare.

Glare Should Be Controlled. Glare in the sense we use it here is light where it is unwanted and dazzling, not in its secondary meaning of too much light. When driving at night the road may seem adequately lighted, but the head lights of an approaching car immediately blot it out. After the car has passed the road again appears well-lighted, though there is no more light on it than before. This is glare, the curse of library lighting and extremely difficult to avoid. A bright light-source or the reflection of a light-source in the field of vision produces it. The field of vision is what lies in front of the



reader and below the ordinary visual angle, usually considered as 30 degrees or by some engineers as 45 degrees from the horizontal. The angle depends on the overhang of a person's eyebrows and differs in individuals. For many persons it is well over 45 degrees. Anything above this angle is not objec-

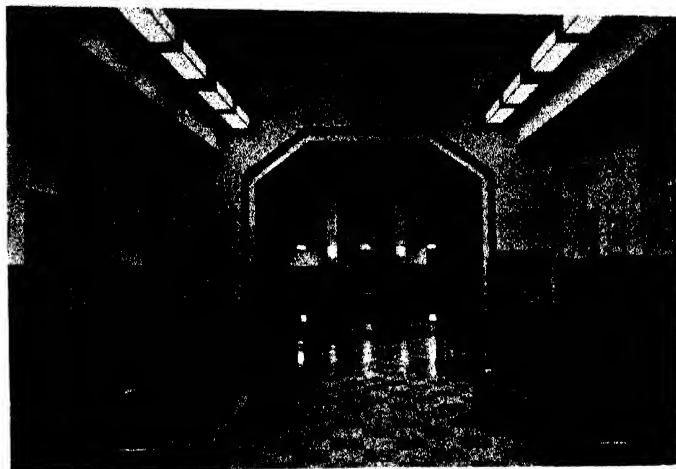
²P. Moon, *Scientific Basis of Illuminating Engineering*. John Wiley and Sons, 1936. See also writings of H. E. Ives, Lythgoe, H. L. Logan, M. Luckeish and others.

tionable, but a bright light or reflection within the field of vision is very objectionable.

To avoid glare, the ideal direction of light would seem to be from above and from the side of the reader; preferably from both sides, since many readers take notes as they read and some are left-handed. The sociology room at Cleveland has table lamps at the left of each reader. We know of no other instance in public library lighting where this principle of artificial light from the sides is adopted, though the reading room at Winchester, Mass., approaches it with its two strips of panel lighting. The well-known school classroom system of unilateral window-lighting exemplified this, neither scholar nor teacher facing light or its reflection. The Joint University Libraries now being built at Nashville propose eliminating windows at the end of any large reading room.

Exposed lamps or globes in the field of vision are the worst offenders with both direct and reflected glare; indirect ceiling illumination with its lower surface brightness spread over a large area is better, for direct and reflected glare are diffused without bright spots; lens-lighting properly distributed in the ceiling and with the inactive facets shielded seems to reduce the glare as much as any other system. Table lamps, as usually placed at the center of the tables, give no direct glare but a high reflected glare. This reflection is so trying to the eyes, that in the opinion of many it rules out table fixtures.

Reflected glare is more common than direct glare and more difficult to reduce. Obviously the reflecting quality of materials in the field of vision should be lessened and high gloss avoided, particularly on the table-top immediately in front of the reader. Reflection from the floor is less harmful than from other surfaces, for the table-top shields it. Glazed paper in many books will have to be accepted; likewise the shiny quality of lead-pencil notes, clear and dark in a side-light but almost invisible under a direct glare from a light-source in front, so that the



Reading Room, Winchester, Mass. Panel lighting; lamps behind flashed opal glass. Room about 43' x 30' = 1290 sq. ft.; 56 lamps each side, 60 w. each, slightly over 5 w. per sq. ft. Lamps in four circuits, so intensity of illumination can be controlled. It has not been found necessary to have all lamps on at once. Kilham, Hopkins and Greeley, and Robert Coit, associated architects, 1931. Photo courtesy Boston Edison Co.

student twists about, vainly trying to get his notebook in a position where he can see his notes without straining his eyes.

A book or notebook in front of a reader has somewhat the quality of a mirror; if the light strikes it from in front the reader looks at it

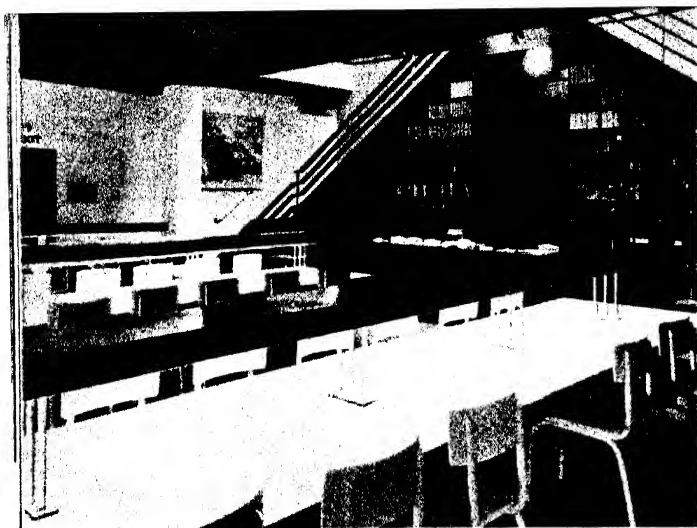


though a glare of reflected light from the paper itself. If the light is increased in an attempt to im-

prove visibility the glare is increased also, neutralizing much of the gain and adding to the eye fatigue. It is our opinion that within reasonable limits the intensity of light is less important than absence of glare; low intensity without glare is better than high intensity with glare.

Light Should Be of Proper Intensity. How much light is proper for reading? Opinions differ widely and much has been written on it. Insufficient lighting in older buildings stimulated a desire for excessive light. Certain engineers of the public service companies have advised from 30 to 50 foot-candles and even more in library reading rooms.³ A dissenting writer, after quoting many different authorities advising various amounts from 10 to 25 foot-candles, states his conclusion that "the critical intensity of light falls considerably below 10 foot-candles, prob-

³For example, Westinghouse Lamp Co. *Illumination Design Handbook*, 96 p. 1936, p. 37.



Reading Room, New School for Social Research, New York City. Light from inverted metal trough reflectors, black on outside, white on inside, with 60-watt lamps in double sockets on 18" centers. Too strong a contrast between the table tops and the room in general. Due to the position of the light trough in front of and below eye level a strong glare is reflected into the readers' eyes from smooth table top or any white paper resting on it. This reflection increases the difficulty of reading printed text on a glazed paper and especially the shiny writing of pencil notes. Joseph Urban, architect.

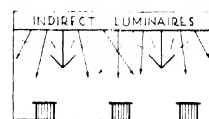
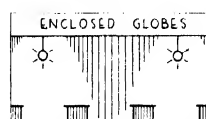
ably between 3 and 4 foot-candles." But he considered "10 to 15 foot-candles of well-dispersed light should be entirely adequate for ordinary reading."⁴

Experiments at Mt. Vernon in both reading and workrooms indicated that the original 25-30 foot-candles of general indirect lighting was unnecessarily high; so by substituting bulbs of smaller wattage it was reduced to 10-15 foot-candles. An analytical booklet published by the General Electric Company recommends 20 foot-candles for library reading rooms.⁵ We believe this is a proper standard, for though various tests and writings indicate little increase in visual acuity beyond 10 foot-candles, the increased intensity will help older people and the surprising number of all ages with slight defects such as astigmatism and short-sightedness. Beyond this 20 foot-candle intensity, there should be an allowance for deterioration of lamps and reflecting surfaces, the amount depending on the system of lighting selected. More illumination than this should be subjected to close scrutiny and economic analysis. It is wise, however, to arrange the wiring so that

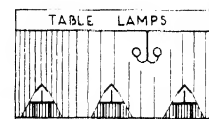
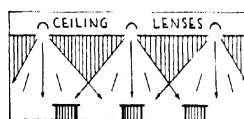
stronger lamps may be substituted if desired for any particular use.

First Cost Should Be Moderate. Economy is generally compelled by the building fund. The elaborate fixtures of the older libraries were far more expensive in proportion to the light they gave than the more recent globes, indirect bowls, or projected light. But first cost is less important than annual cost.

Current Consumption Should Be Moderate. It is important to the annual budget that the best light be obtained from the least expenditure in electric bills. But the best light does not mean the most light. Direct lighting with exposed lamps, or with lamps enclosed in glass globes, gives the most light for current con-



sumed but the worst glare and therefore a poor light. Comparative figures are misleading; room conditions vary widely and an enthusiast is apt to find figures vindicating his favorite



type of lighting. However, for purposes of rough comparison, we will assume fairly good conditions and present the following wattages in filament lamps per foot of floor area of workrooms or reading rooms:

	Watts per Sq. Ft.
Direct lighting, enclosed globes	2
Indirect luminaires, flat white ceiling	2½
" curved coffers	2¼
" large coves	3
Ceiling lenses, projected light	1½
Diffusing glass panels	5

⁴M. A. Tinker, "Hygienic Library Illumination," *Lab. Jour.* 63:532-34, July, 1939. Also C. E. Ferree and G. Rand, "Work and Its Illumination," *Personnel Journal*, v. 19, p. 55-64, June-July, 1940.

⁵General Electric Co. *Illuminating Design Data*, 70 p. 1939, p. 10.

The lens seems lowest, but it may require a little supplementary lighting for general illumination.

There is an unfortunate temptation to economize by turning out a light here and there. The result is that a system properly designed delivers an irregular intensity of light, one table lighted and the next dark. A recent light-test of the Baltimore reading rooms in ordinary evening use showed a variation from 4 to 10 foot-candles on the tables, but when all the lights were switched on the range was from 9 to 13 foot-candles.⁶ If a lower intensity is desired at times, a three-intensity system should be planned as described later in this chapter.

To reduce current consumption, have fairly light walls and a light ceiling; have the required wattage supplied by as few and as large lamps (bulbs) as possible; change the lamps when they become dark in color (after 800 to 1000 hours of burning); keep the fixtures clean and, if the system is indirect, keep the ceiling clean and pure white if possible.

Maintenance Cost Should Be Moderate. This prescription requires proper maintenance, and part of the saving in electricity is absorbed. Keeping watch on the lamps to change them when they grow dim takes time, so in practice they are seldom changed before they burn out and the fixtures seldom cleaned until obviously dirty. A regular system of cleaning and replacement should be maintained. Cleaning and repainting the ceiling are disturbing to readers unless done after hours, and the costs are high. "Servicing" the lamps behind lenses in a high ceiling without access from above requires a high ladder and is a slower process than for a hanging fixture. So it seems there is always a compromise between efficiency and the cost of maintaining it.

TYPES OF LAMPS OR BULBS

Standard Mazda Filament Lamps or Bulbs are almost universally used. They vary from 15

⁶Data of this library's lighting recently quoted in an American and an English publication are incorrect.



Restaurant, Administrative Building, New York World's Fair. Lighting through Fresnel lenses, set flush with ceiling, with 75-watt lamps and reflectors behind, spaced on approximately 11 ft. centers in an acoustical tile ceiling. The vertical risers of the Fresnel lenses are treated with a ceramic diffusing yellow paint which kills most of the glare, so that at normal angles of vision these lighting units appear as decorative yellow plaques which blend with the yellow ceiling. The projected light on the table tops is unmodified in intensity, color or efficiency. Two-thirds watts per sq. ft., 7 foot-candles at table level. Edgar Williams, Stevenson & Studds, Kimball & Husted, John A. Thompson and Gerald A. Holmes, architects; Hamel and Engelken, illuminating engineers, 1939. Photo. courtesy General Electric Co.

to 1500 watts, the wattage a measure of electricity used and not of light output. The higher wattages give out more light per watt than the lower in regular crescendo; therefore they are more economical. A 1000-watt lamp gives out 20,000 lumens, while ten 100-watt lamps give out only 15,000 lumens, yet they use the same amount of electricity. With two unequal lamps in the same fixture, three intensities of light can be produced: The small lamp lighted alone, the large one alone, or both lighted together. A three-intensity lamp accomplishes the same result by the use of two filaments of different luminous outputs, but is more expensive in lamp cost. This flexibility in lighting intensity may be useful and a great comfort to staff and readers. It requires additional wiring and switches.

Lumiline Tubes and other forms of filament tubes are adapted to special conditions but are much more expensive for the light output than standard lamps.

Mercury Vapor Lamps are highly expensive and offer no particular advantage for library work except in a rare instance where color correction may be required.

Fluorescent Lamps promise a revolution in interior lighting and their great possibilities deserve consideration for any new building. Scarcely two years in general service, this lamp has proved a practical and adaptable light source, with about twice the efficiency, only half the total heat, and only a quarter the radiant heat of the incandescent lamp. It is furnished in sizes ranging from 15 to 100 watts, in lengths from 18" to 60" and its tubular shape permits easy concealment in coves and certain types of fixture. Its surface brightness is less than that of a filament lamp, but sufficiently intense to be distinctly glaring, exposed in a reading room. An auxiliary in the fixture is required to alter the current. Lamps cost more than filament lamps, and the cost of the auxiliary must be added. So a proposed fluorescent lighting system should be carefully scrutinized for initial and replacement costs and current consumption, compared with an equal foot-candle installation of filament lamps. However, the "cool" foot-candles of fluorescent lamps make them particularly good for exhibit case lighting and may justify extra expenditure for table use and for general use if there is air conditioning. They show color much as it appears in natural light, of great importance in exhibit case lighting but not in a reading room. At the present writing a slight hum is sometimes noticeable from the auxiliary, so where absolute quietness is essential the fluorescent lamps are not recommended.

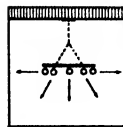
There are other difficulties materializing. Anyone considering fluorescent light should be on his guard and do nothing without the advice of an illuminating engineer.

LIGHTING UNITS, FIXTURES OR LUMINAIRES

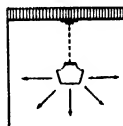
This section briefly summarizes the types of lighting units currently used in library rooms and workrooms. New types and variations of these types are constantly being developed.

Exposed Lamps. Frosted filament lamps of low wattage, usually spherical; grouped in suspended, rather elaborate metal fixtures; type

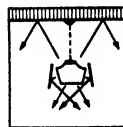
now obsolete (Wilmington, Philadelphia, Aliquippa). This type should never be used as the main source of illumination because of the high brightness of the bulbs. If required for ornamental purposes, fixtures should have lamps of very low wattage (10 watt) and should be supplemented by another system of illumination for the actual reading light.



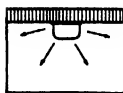
Enclosed Luminaires. Single high-wattage bulbs enclosed in globes of opal glass suspended from ceiling; various shapes, sometimes partly prismatic, designed to throw either most of the light down (direct) or most of it up to diffuse from ceiling (direct-indirect). Inexpensive, high efficiency; easily maintained but with a vicious glare in a long room where the globe position falls within the visual angle. The most widely used type (Philadelphia, Richmond, Fort Worth, workrooms in Los Angeles; the children's room and workrooms at Cleveland; reading rooms in Baltimore, etc.).



Occasionally the globe is covered at the side by a shade of parchment or metal to shield the globe brightness from distant tables or "remove it from the field of vision" and thus reduce its glare (Highland Park and Riverside, Ill.; Briggs Branch, Trenton; children's room at Rochester). This is a fairly satisfactory remedy and a reading or workroom now fitted with exposed globes should experiment with these shades.

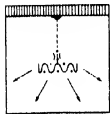


In very low rooms shallow bowls are generally used, set tight against the ceiling. This fixture is usually unsatisfactory due to its high brightness directly in the field of vision and its exaggeration of any irregularity in the ceiling. Large bowls with low wattage lamps have the least surface brightness and are therefore the least unpleasant.

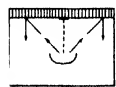


Built-up Fixtures of Glass and Metal. Diffus-

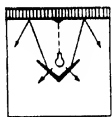
ing the light and reducing the direct glare; may be very handsome but usually are not efficient; widely used, but seldom in reading or workrooms.



Open Indirect Luminaires. Pendent open bowls, throwing nearly all their light on the ceiling. Thus the entire ceiling becomes the light source and the illumination is diffused. Effective and economical provided the ceiling has a smooth white diffusing finish and the bowl and ceiling are

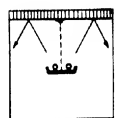


kept clean. The bowl may be of metal, usually enameled in a light color, often with concealed openings to "spill" the light on the outside of the bowl and reduce the impression of a heavy hanging mass (children's room at Amherst, Mass.; Branches at Bridgeport, Conn.); or it may be of semi-translucent glass, often white and glaring, little better than an ordinary globe; or it may be of heavy tinted, slightly translucent glass, scientifically designed to reflect most of the light to the ceiling but allow a



little of it to filter through the glass and produce a surface brightness corresponding to that of the ceiling itself when lighted, *i.e.*, Magnalux or Ainsworth fixture (Rochester and Mt. Vernon, N. Y.; Concord, N. H.); or the bowl may be of translucent "Plastic"; or the fixture composed of a self-reflecting silvered bulb surrounded by a reflecting metal or glass concave disc, *i.e.*, the Silvrax fixture, effective and economical, but the bulb deteriorates and replacement cost is rather high.

The pendent indirect metal or glass trough is a development of the indirect bowl and may be used with either filament or fluorescent lamps.



Lighting by these open indirect luminaires is one of the best systems of reading and workroom lighting; but its efficiency depends upon the Utilization Factor of the room (size and shape, color scheme, window



Reading Room, Springfield (Mass.) Museum of Fine Arts. Direct light from closely-spaced hanging 4-lamp fixtures with opal glass diffusers. Area of diffuser so large that surface brightness is low; same theory as lighting by diffusing panels. Note that this is a daylight photograph so does not demonstrate the lighting. Edw. L. Tilton and A. M. Githens, architects, 1934. Furniture designed by William Lescaze, architect; lighting fixtures by Kurt Versen. Photo. Alfred Sands Githens.

openings) and on the maintenance of a smooth white ceiling. It has been proposed, as a complement to a system of indirect lighting, that the light-values of a natural landscape be simulated in the room by a bright ceiling and pale gray-green walls to rest the eyes when glancing up from work.⁷

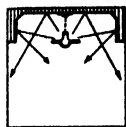
Open Direct-Indirect Luminaires. Generally similar to indirect fixtures but with a glass bowl at the bottom to throw part of the light downward; efficient but glare unavoidable (*e.g.*, the Duplexalites at Wellesley Hills, Mass.; Morristown, N. J.; children's room at Baltimore). This type should not be confused with the new combination direct-indirect fixture with Fresnel lens at the bottom, which if properly designed for the particular room will give an excellent form of controlled and directed lighting. The Fresnel lens should be adjusted as suggested later under "projected lighting."



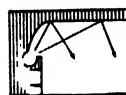
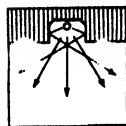
Coffer Lighting. An indirect lighting fixture, with filament lamps or a "grid" of fluorescent lamps under a deep white reflecting recess in ceiling; efficient; no example in public libra-

⁷George Ainsworth, at Illuminating Engineering Society meeting, New York, Dec. 15, 1938.

rics. "Troffer" or "trough" is a long deep coffer, a new type used principally with a fluorescent lamp deep in the recess, and proportioned so that the lamp itself does not fall within the visual angle. The coffers are rather expensive to construct.



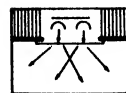
Cove Light. Set above a cornice or on top of wall bookshelves, reflecting on a coved ceiling; so it is an indirect light with concealed source (reference room at Indianapolis; Petworth Branch, Washington). Excellent under certain conditions, where the room is not too wide and where the cove is large and very accurately designed for its particular diffusing function. Economic in electric consumption if smooth white cove and clean reflectors are maintained. Fluorescent lamps can be used.



Torchons. Rather tall indirect fixtures usually standing directly on the floor and throwing light from a concealed source on a bright ceiling (Santa Barbara). Similar fixtures standing on pedestals, catalog cases, bookshelving, or other equipment are called Urns (circulation hall in Indianapolis); against the wall, Wall Urns. Excellent method of producing general illumination, possibly as a supplement to direct lighting from the ceiling. A torchon may be used to illuminate the dark corner of a workroom, or an inadequately lighted service desk.

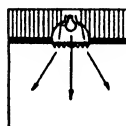


Diffusing Glass Panels. In upper walls or ceiling with lamps and reflectors behind; often in form of an artificial skylight; low surface brightness, good diffusion, little glare. Several intensities of illumination easily possible. A pleasant light; but high in current consumption due to absorption of the light by the glass; expensive to maintain at full efficiency (Winchester, Mass.).

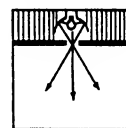


Projected Lighting. From lenses and reflectors usually set flush in the ceiling or, if there is

no space, mounted on the surface of the ceiling. This system can be very efficient but requires skill in designing the units. Their light distribution should provide plenty of overlap and they should be asymmetric, with their greatest spread along the length of the reading tables, thus projecting the light from the sides rather than from the front and rear of the reader. Lighting units should be of large area with comparatively small-wattage lamps in order to reduce surface brightness. The Holophane control lenses or the new Fresnel lenses should be used. The new Fresnel lens offers a method of controlling the heretofore objectionable surface brightness of prismatic lenses when seen from the side at normal angles of vision. The lens is treated with a ceramic diffusing medium on the vertical slopes of the prisms, thus diffusing and reducing the light beams which ordinarily cause a direct glare within the normal field of vision. This ceramic medium may match the color of the ceiling.



The ceiling does not serve to reflect the light, but if dark it makes a violent contrast with the lens. Fairly economical in first cost and very economical in electric consumption; may be difficult to service if ceiling is high, unless access to lamps is from above. (Brooklyn Central; Glendale Br. at Queens Borough, N. Y.; over desk at West Hartford, Conn.). This and the preceding glass panels are recently developed types, used in shops and restaurants, and favored by modernistic designers because they



avoid the confusion of hanging objects. It may be wise to include a supplementary system of general illumination to throw a little light on the ceiling which otherwise would be rather dark.

Other systems of direct lighting, such as the projection of light through small openings, or through larger openings fitted with concentric louvres, are not generally recommended because of high electric consumption and the harsh deep shadows produced.

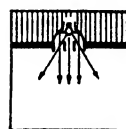
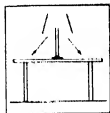
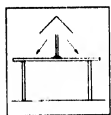


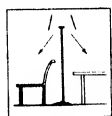
Table Lamps. These concentrate light on the reading area, hence are a form of local lighting as distinguished from general illumination. Light source must be shaded from reader's eyes; very economical in current consumption, but requiring either the table to be in a fixed position, or the lamps connected by loose extension cords that are subject to damage.* Table lamps interfere with observation of the readers by the staff; are almost impossible to place so as to avoid reflected glare from book or paper; must be designed to throw part of the light on the ceiling or else be combined with some form of general illumination (Philadelphia, Cleveland; also Wakefield, Longmeadow, Great Barrington, Amherst, Wellesley Hills, all in Mass.; there is a fluorescent lamp of this type at the Morgan Library, New York City).



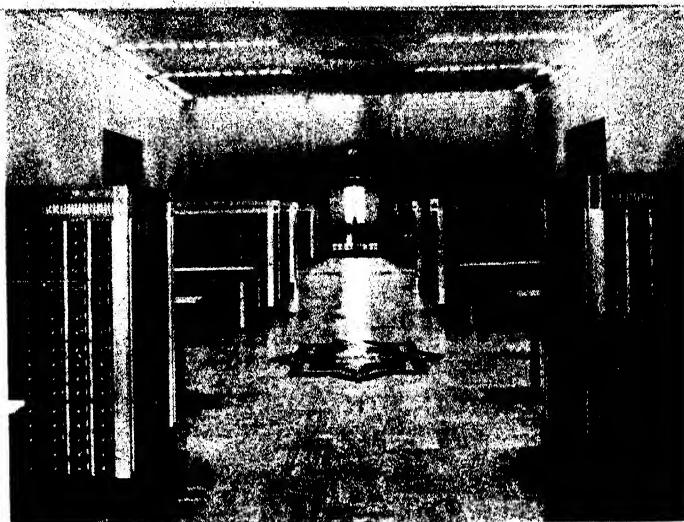
Continuous Table Lamps. Set in a long trough over the center of the table, thus avoiding one objection of individual table lamps, their alternation of light and dark areas on the working surface. This type has the advantage of screening opposite readers from each other's gaze; no examples in public libraries but common in colleges (Higbie Lamp at University of Michigan; New School for Social Research, New York City). Strong reflected glare unavoidable unless fitted with the new Polaroid Screen, an expensive device which eliminates much of the reflected glare but reduces light intensity about 50%.



Standing Lamps. At end of tables, throwing part of the light on ceiling and part down on reading tables (Riverside, Ill.; Tarrytown, N. Y.; reference room at Los Angeles). System provides satisfactory lighting for short tables, but does not produce a uniform illumination over a long reading table.



*The Illuminating Engineering Society has developed certain standards of efficiency for table lamps and standing lamps, and placed the I.E.S. seal or tag of approval on commercial fixtures that meet these standards.

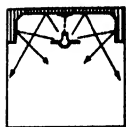


The Catalog, Library of Congress Annex, Washington, D. C. Light through Holophane lenses set flush with ceiling; lamps and reflectors behind. Spacing of lenses unusually close, with comparatively low wattage lamps; provides a distribution generally suited to the existing conditions and requirements. Pierson and Wilson, architects. Alexander G. Trowbridge, consulting architect. 1938. Photo. courtesy General Electric Co.

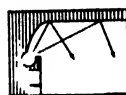
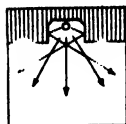
SELECTION OF A LIGHTING SYSTEM

This depends on the size and shape of room, character of ceiling and its height, the esthetic expression desired, and personal preference. The intimate air of a traditional country house or a conservative club would be injured by lens-lighting or coffer; Amherst, Longmeadow, and North Tarrytown were justified in choosing table lamps and chandeliers despite their attendant shortcomings in distribution. If unrestricted by style, the type best suited to the particular local conditions can be selected. Thus hanging indirect luminaires, very efficient under most conditions, are not efficient in either a very low room (7' to 8') or a very lofty room (18' or over) or under a wooden roof; and any acoustic material that cannot be painted, or any other departure from a pure flat white color in the ceiling, reduces the light-output of this type surprisingly; but plaster beams and girders, if the light can be spaced in accordance with them, are not disadvantageous. The various forms of coffer and trough lighting are growing in favor. These require a bright ceiling, directly over the light at least. Lens lighting seems as popular as any of the new types, though the development of fluorescent lamps may result in favoring one of the other types.

rics. "Troffer" or "trough" is a long deep coffer, a new type used principally with a fluorescent lamp deep in the recess, and proportioned so that the lamp itself does not fall within the visual angle. The coffers are rather expensive to construct.



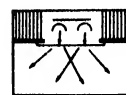
Cove Light. Set above a cornice or on top of wall bookshelves, reflecting on a coved ceiling; so it is an indirect light with concealed source (reference room at Indianapolis; Petworth Branch, Washington). Excellent under certain conditions, where the room is not too wide and where the cove is large and very accurately designed for its particular diffusing function. Economic in electric consumption if smooth white cove and clean reflectors are maintained. Fluorescent lamps can be used.



Torchons. Rather tall indirect fixtures usually standing directly on the floor and throwing light from a concealed source on a bright ceiling (Santa Barbara). Similar fixtures standing on pedestals, catalog cases, bookshelving, or other equipment are called Urns (circulation hall in Indianapolis); against the wall, Wall Urns. Excellent method of producing general illumination, possibly as a supplement to direct lighting from the ceiling. A torchon may be used to illuminate the dark corner of a workroom, or an inadequately lighted service desk.

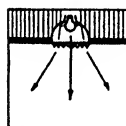


Diffusing Glass Panels. In upper walls or ceiling with lamps and reflectors behind; often in form of an artificial skylight; low surface brightness, good diffusion, little glare. Several intensities of illumination easily possible. A pleasant light; but high in current consumption due to absorption of the light by the glass; expensive to maintain at full efficiency (Winchester, Mass.).

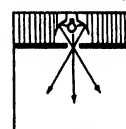


Projected Lighting. From lenses and reflectors usually set flush in the ceiling or, if there is

no space, mounted on the surface of the ceiling. This system can be very efficient but requires skill in designing the units. Their light distribution should provide plenty of overlap and they should be asymmetric, with their greatest spread along the length of the reading tables, thus projecting the light from the sides rather than from the front and rear of the reader. Lighting units should be of large area with comparatively small-wattage lamps in order to reduce surface brightness. The Holophane control lenses or the new Fresnel lenses should be used. The new Fresnel lens offers a method of controlling the heretofore objectionable surface brightness of prismatic lenses when seen from the side at normal angles of vision. The lens is treated with a ceramic diffusing medium on the vertical slopes of the prisms, thus diffusing and reducing the light beams which ordinarily cause a direct glare within the normal field of vision. This ceramic medium may match the color of the ceiling.



The ceiling does not serve to reflect the light, but if dark it makes a violent contrast with the lens. Fairly economical in first cost and very economical in electric consumption; may be difficult to service if ceiling is high, unless access to lamps is from above. (Brooklyn Central; Glendale Br. at Queens Borough, N. Y.; over desk at West Hartford, Conn.). This and the preceding glass panels are recently developed types, used in shops and restaurants, and favored by modernistic designers because they



avoid the confusion of hanging objects. It may be wise to include a supplementary system of general illumination to throw a little light on the ceiling which otherwise would be rather dark.

Other systems of direct lighting, such as the projection of light through small openings, or through larger openings fitted with concentric louvres, are not generally recommended because of high electric consumption and the harsh deep shadows produced.

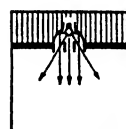
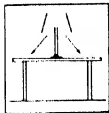
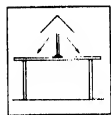


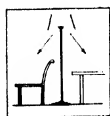
Table Lamps. These concentrate light on the reading area, hence are a form of local lighting as distinguished from general illumination. Light source must be shaded from reader's eyes; very economical in current consumption, but requiring either the table to be in a fixed position, or the lamps connected by loose extension cords that are subject to damage.^{*} Table lamps interfere with observation of the readers by the staff; are almost impossible to place so as to avoid reflected glare from book or paper; must be designed to throw part of the light on the ceiling or else be combined with some form of general illumination (Philadelphia, Cleveland; also Wakefield, Longmeadow, Great Barrington, Amherst, Wellesley Hills, all in Mass.; there is a fluorescent lamp of this type at the Morgan Library, New York City).



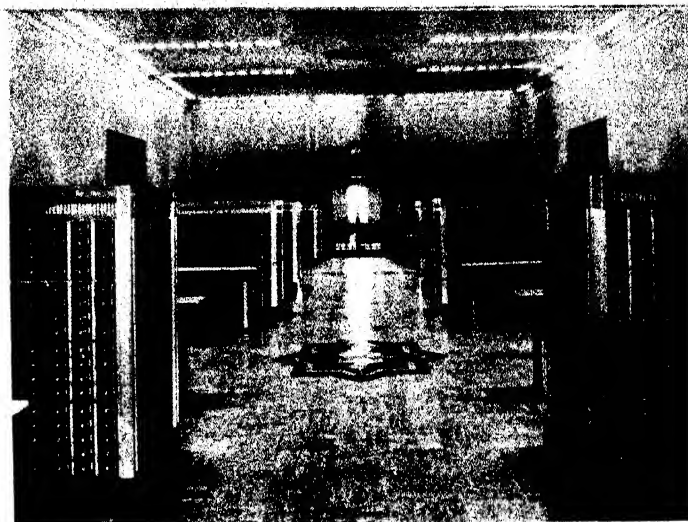
Continuous Table Lamps. Set in a long trough over the center of the table, thus avoiding one objection of individual table lamps, their alternation of light and dark areas on the working surface. This type has the advantage of screening opposite readers from each other's gaze; no examples in public libraries but common in colleges (Higbie Lamp at University of Michigan; New School for Social Research, New York City). Strong reflected glare unavoidable unless fitted with the new Polaroid Screen, an expensive device which eliminates much of the reflected glare but reduces light intensity about 50%.



Standing Lamps. At end of tables, throwing part of the light on ceiling and part down on reading tables (Riverside, Ill.; Tarrytown, N. Y.; reference room at Los Angeles). System provides satisfactory lighting for short tables, but does not produce a uniform illumination over a long reading table.



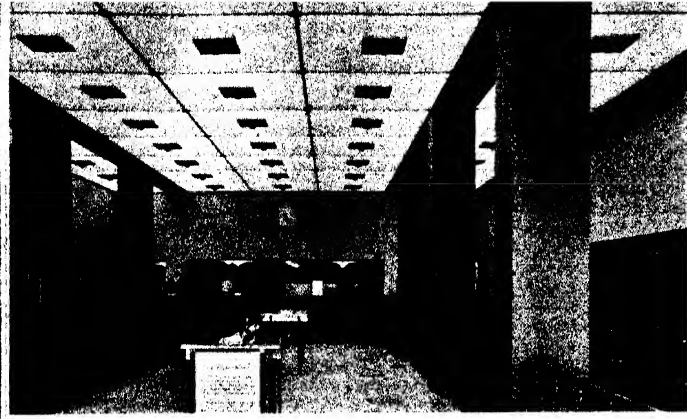
^{*}The Illuminating Engineering Society has developed certain standards of efficiency for table lamps and standing lamps, and placed the I.E.S. seal or tag of approval on commercial fixtures that meet these standards.



The Catalog, Library of Congress Annex, Washington, D. C. Light through Holophane lenses set flush with ceiling; lamps and reflectors behind. Spacing of lenses unusually close, with comparatively low wattage lamps; provides a distribution generally suited to the existing conditions and requirements. Pierson and Wilson, architects. Alexander G. Trowbridge, consulting architect. 1938. Photo. courtesy General Electric Co.

SELECTION OF A LIGHTING SYSTEM

This depends on the size and shape of room, character of ceiling and its height, the esthetic expression desired, and personal preference. The intimate air of a traditional country house or a conservative club would be injured by lens-lighting or coffer; Amherst, Longmeadow, and North Tarrytown were justified in choosing table lamps and chandeliers despite their attendant shortcomings in distribution. If unrestricted by style, the type best suited to the particular local conditions can be selected. Thus hanging indirect luminaires, very efficient under most conditions, are not efficient in either a very low room (7' to 8') or a very lofty room (18' or over) or under a wooden roof; and any acoustic material that cannot be painted, or any other departure from a pure flat white color in the ceiling, reduces the light-output of this type surprisingly; but plaster beams and girders, if the light can be spaced in accordance with them, are not disadvantageous. The various forms of coffer and trough lighting are growing in favor. These require a bright ceiling, directly over the light at least. Lens lighting seems as popular as any of the new types, though the development of fluorescent lamps may result in favoring one of the other types.



Banking Room, Irving Trust Co., New York City. Light from hanging square metal indirect luminaires, each with one 300-watt lamp, centered in 6' open square plaster coffers, 18" deep. No glass. Averages about 5½ w. per sq. ft., with 25 foot-candles at desk height. Coffers need not be contiguous. Voorhees, Gmelin & Walker, architects, Everett V. Meeks, consultant. C. I. Cady, illuminating engineer. Photo. courtesy General Electric Co.

There is a sharp disagreement among librarians concerning the merit of table lamps vs. a general system of illumination. For the various public reading rooms of a public library the preponderant opinion seems strongly against table lamps. They may be best for home or office or drafting room where only a few persons are involved and where they are quite conscious of their relation to the light, so they may move the light sources to avoid reflected glare. But one must contrast this ideal condition with the utter impossibility of setting up a similar condition for a large number of lamps and a large number of readers in one common room, and must realize also that most readers are not conscious of the problem, but take lighting for granted and do not protect their eyes by getting a proper relationship between the light, the book, and their eyes. To convince oneself of the helplessness of the average person in the matter of lighting it is only necessary to study the positions readers choose in any public reading room. The conclusion must be that lighting is best when it is fairly uniform no matter how the reader seats himself or holds his book; that if there is a possibility of glare he is apt to take a position where it is full in his eyes; and that table lamps, giving the greatest possibility of intense reflected glare, are therefore to be avoided. Other objections, mentioned before, are less important than this matter of glare.

Not only the old libraries but many of the latest are equipped with obsolete systems. Development is now so rapid that anything written on the subject is soon out of date. The choice of type should be made in consultation with a lighting engineer as well as the architect, for there are many elements entering into it. The engineer should be retained before the plans are far advanced, so the character of a room, its furniture, color and lighting system can be developed together.

IMPROVEMENT OF LIGHTING IN EXISTING LIBRARIES

There can be no general direction for this. Local conditions, nature of electric service, shape and character of the rooms, construction, possibility of changing the color of walls and ceilings, the existing wiring, all must be studied and the various new types of lighting considered. Unquestionably the majority of rooms in libraries over five years old need restudy and reequipment to take advantage of new developments.

REMINDERS

Certain matters are apt to be overlooked even though the general lighting system and the type of fixture are wisely chosen. We will make several suggestions:

1. Plan the location of *all* furniture and equipment while the building plans are being developed, so that all wiring and outlets will be provided in the contract drawings. This will prevent afterthoughts and expensive "extras."
2. There is apt to be a scarcity of lighting outlets in reading rooms, workrooms, and offices, and too many in the corridors. Lighted exhibit cases placed in corridors will further decrease the corridor lighting needed.
3. In rooms with low ceilings and in the corners of rooms where card catalog, service desks, and work desks are to be located, make sure that the general lighting will actually deliver the requisite foot-candles on the working surface. Supplementary local lighting may be required, such as trough lights, lens units, torchons, or other

fixtures which will insure suitable diffused illumination from concealed lamps.

4. Base and wall plugs should be provided generously for fans, vacuum cleaners, and unforeseen local lighting. Portions of the wall shelving may be dark and need reflector troughs, or electric fans may be needed at the top of the shelving; a series of wall plugs and sockets should be placed at a level just above it.

5. Check the lighting at exterior entrances to see that it is adequate and well designed. Too many libraries have dark entrances. Consider concealed soffit lighting, tread lighting, and the possibility of floor lighting.

BIBLIOGRAPHY

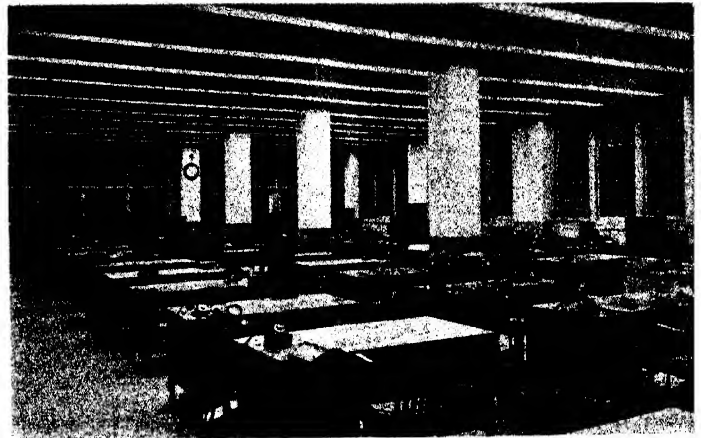
There is a vast amount of literature; the following are not technical:—

"Modern Interior Lighting: American Architect Reference Data." *Am. Arch.*, Nov.-Dec., 1934; reprinted as a pamphlet.

R. D. Hilton-Smith, *Public Library Lighting*. (Librarian Series of Practical Manuals), Vol. I, Natural Light, 1937; Vol. II, Artificial Lighting, Part 1, 1938; Part 2 not yet published. Gravesend, England; Alex. J. Philip. Can be obtained from the H. W. Wilson Co., 950 University Avenue, New York City.

American Recommended Practice of School Lighting. Illuminating Eng. Soc. and A.I.A., 1938. Pamphlet.

Light in Architecture and Decoration: Annual, published by Illuminating Engineering Society, New York City.



Office Area—General Electric Company Warehouse Building, Newark, N. J. Light from Barkon enameled metal troughs, or "Troffers," 5'4" on centers, 11" deep and 12" wide, a single row of fluorescent lamps in each. Lamps set deep in trough, therefore not within the angle of vision. Light comes directly from the lamp and indirectly from the sides and top of the troffer. Ceiling 11' high, bays 16' x 20'. Acoustic tile on flat ceiling between. Although the efficiency of fluorescent tubes is higher than incandescent lamps, the total light output per unit length is comparatively low, so that more fixtures may be required than with an efficient incandescent system. This installation uses 2½ watts per sq. ft., giving a 50 foot-candle intensity on the working plan. Photo. courtesy Gen. Elect. Co.

Artificial Light and Its Application. Commercial Engineering Department, Westinghouse Elec. & Mfg. Co., 1940.

Various pamphlets issued by the General Electric Company, Nela Park Engineering Department, Cleveland, Ohio.

An extensive list of references appeared in *Wilson Bulletin*, Feb., 1933, pp. 382-83. But on this subject information more than two or three years old loses much of its value. The A.L.A. in March, 1937, issued a supplementary mimeographed list of references, and a revised list will probably be available from them from time to time. They plan soon to issue a comprehensive booklet on library lighting.

CHAPTER 39: HEATING, VENTILATING, AIR CONDITIONING

NEWER SYSTEMS and the improvements in the older ones, present a wide choice of possible equipment for a new building. Each system has its advantages and its shortcomings; changes are rapid; only the most recent libraries are helpful as examples; and in this subject more than in any other the guidance of an able engineer is needed. All we can do here is to comment briefly on the different systems now in use.

Hot Air Heating from a jacketed furnace; only applicable to a very small library; differs from what it was years ago by the introduction of an air filter and an electric fan to force a circulation of the air through the ducts; fresh air is assured. There is nothing in the system to freeze when the building is closed, although sufficient heat must be supplied the toilet rooms to keep the traps and water supply from freezing. Economical in a very small building when most of the air is recirculated, as is proper. Hazards include possible leaks between fire-pot and jacket that bring fly-ash and noxious gases through the ducts to the rooms. Small libraries in cold climates find this system advantageous, especially when run with mechanical stokers or oil burners, which keep a much more even heat than hand-firing with coal.

Steam Heating by direct radiation: The cruder, one-pipe gravity steam system is not satisfactory. The two-pipe vapor-vacuum, with return pump and vacuum return valves similar to the Dunham or Warren-Webster type, has been for years and still is the most generally used heating system. Efficient and economical, but dries the air excessively. Water pans at the radiators are difficult to arrange, and usually neglected.

Hot Water Heating by direct radiation with forced circulation seems to be replacing vapor-vacuum steam; first cost is no greater except in

a small building; the life of the system is longer, fuel costs somewhat lower, less fluctuation of heat, and it seems not to dry the air so excessively; but radiators are larger. In a small building the water is heated directly by a hot water boiler; in a large, indirectly by a steam boiler (Brooklyn).

Ventilating Systems supply fresh air and, what is equally important, keep all the air in motion. A library, no matter how small, should have partial ventilation at least. Fresh air is taken where the air is clean; in a large building sometimes by great down-ducts from the roof (Brooklyn and Baltimore), mixed with air drawn from the rooms, warmed, and driven by electric fans through metal ducts to the rooms.

Newspaper rooms and children's rooms with a miscellaneous crowd of washed and unwashed persons need separate ventilation, for it may be required independently of the rest of the building, especially in rainy weather. Toilet rooms are attached to a separate exhaust system discharging to outer air at the roof; a slow but constant current enters from the halls through louvers in the doors, carrying away any odor.

Noise must be guarded against, for all fans make a little noise and ducts convey it. Fans should be carefully chosen, of suitable design for comparatively noiseless operation and large enough not to require running at high speed; bases insulated to prevent the spread of vibration; ducts amply large to conserve motor-power and avoid "air-whistle" in the ducts themselves or through the registers. It is desirable that all parts of the system be of such ample proportions that they will function at slow speed without the fan at night or when heating requirements are not severe.

If a general ventilating system is installed the ducts should be arranged so they may be used later for air conditioning.

There is always the device of the local *Unit Ventilator* (described later) for ventilating or air conditioning a single room or two. Where complete conditioning cannot be afforded, the staff workrooms and offices should be equipped with them much more commonly than they are.

Duct Heating utilizes the duct system for both heating and ventilating and avoids the cost and nuisance of steam mains and returns. The air blown into the rooms is sufficiently above room temperature to counteract heat-loss. Air conditions are exceptionally good, but the increased use of current for the fans is expensive. Outlets must be carefully placed and controlled to avoid objectionable drafts (Lake Forest, Ill.; Roselle, N. J.; Aliquippa, Pa.; four branches at Tulsa, Okla.).

Split Systems of heating and ventilating (by a dual equipment) combine direct radiation, to supply all the heat needed, with a supplementary ventilating system to introduce air at room temperature. Most recent libraries have adopted a split system, for it is usually more economical than complete heating and ventilating through air ducts, though it requires steam or hot water mains and returns throughout the building.

Air Conditioning is a term loosely used. Complete air conditioning includes:

- Filtering the air
- Heating and humidifying it for winter
- Cooling and drying it for summer
- Circulating it

Air conditioning is one of the major benefits of modern building engineering. Whether its advantages justify the expense of equipment and operation depends altogether on local conditions. The early faults, *i.e.*, excessive changes in body temperature on entering and leaving the building and periodic breakdowns in the equipment, have been largely rectified. Operating costs have been reduced; *e.g.*, in one large central building approximately 3,000,000 cu. ft.

¹See *Lib. Jour.*, Apr. 1, 1935, for discussion of three library installations.

²E. A. Kimberly and B. W. Scribner. *Summary Report . . . on Preservation of Records*. U. S. Bureau of Standards. Misc. Pub'n M154. 28p. 1937, p. 27.

can be cooled and dehumidified within 45 minutes on days of 90° and excessive humidity, and operated 12 hours for less than \$20 per day. The popularity of the air conditioning due to noticeable comfort and satisfaction of the readers is a distinct asset.¹

In down-town areas and where there is heavy traffic, both in the North and the South, noise and dirt are ever-present problems; they are shut out when air conditioning is in effect, just as they are in winter with a modern ventilating system. This is a major consideration in both city library and busy branch.

The U. S. Bureau of Standards² has made extensive studies and tests, and sets 55% as the desirable humidity in book storage spaces and 45% in workrooms, the latter more suitable for human beings; the temperature 70° in winter and 80° in summer, the latter avoiding sudden exposure to too great difference between the outer air and the air in the building. There is a great danger of condensation, however, when humidities vary in different parts of the building. An even humidity of 45% throughout the building is more practical. In the Southeast and Mississippi Valley the extreme heat and the humid climate make conditioning highly desirable, while in the Southwest the air is dry and conditioning not so important. In the northern states the decision is not at all simple. It is essential to recognize that much of the concern has come from private, state and university librarians, responsible for the physical condition of valuable bookstocks, where mildew on the one hand and drying out and brittleness on the other result from uncontrolled moisture and aridity. The ordinary public library has few excessively rare or valuable books. Its local newspaper files, highly perishable, are increasingly being filmed. Its real problems are (a) comfort of the staff, (b) of readers, (c) exclusion of noise, (d) of dirt, (e) protection of books from excessive dryness or moisture, for even with every-day circulating books, summer mildew is a problem in many areas.

The contour of the building is an important

factor in air conditioning as well as in heating. The more compact, the less surface exposed to either the heat or cold of the outside air. The more it is spread out and the more projecting features there are, the greater the wall and roof surface in proportion to the contents, so the greater the heat loss in winter and heat absorption in summer. Therefore, if air cooling is contemplated, the more compact the more efficient. If air cooling is *not* to be installed, a long narrow building in a warm climate may more than compensate for this exposure because it permits cross draughts of outside air through open windows.

Filtering, Heating, Humidifying, and Circulating are comparatively simple and a normal part of every proper ventilating system; the humidifying is accomplished by a simple and inexpensive addition to the ventilating system.

In winter the fresh air from outside passes through a screen of wire mesh or a filter of some sort, sometimes of fabric, sometimes of steel wool saturated with oil, then through a steam coil or radiator called the "pre-heater" or "tempering coil" to prepare it for absorbing water, for the warmer the air, the more water it normally carries in suspension; next through a water spray which saturates it and incidentally removes any remaining dust; then through an "eliminator," a series of baffles which catch the excess moisture; then through another steam coil or radiator called the "reheater" or "reheating coil"; next through the fan which has drawn it from the outside and now pushes it through the distributing system of air-ducts to the various rooms.

In summer the heaters and water-spray are not used (unless there is cooling and dehumidification), but the fan and filter assure a welcome movement of clean air.

Another system of ducts operated by a return fan draws air from the rooms, discharges part of it outside, but returns most of it to the air-conditioning apparatus in front of the filter, to be mixed with the incoming fresh air and recirculated or used over again.

Cooling and Dehumidifying are the more recent and more expensive phases of air conditioning.

Cooling is cheapest when an artesian well of cold water is available; city water is not cold enough in summer. The air is cooled by being forced through a fine water spray or past coils in which the water is circulated. Ice is suitable only for small installations; its use in railroad cars is familiar.

Air is sometimes dehumidified by passing it over a water-absorbing substance, for instance Silica Gel or Alumina; when the substance is saturated it is dried out by heat and used over again.

But most systems require neither cold material nor drying material and combine both cooling and dehumidifying in a single mechanical operation. They utilize three physical phenomena:

1. Latent heat and the chill caused by evaporation;
2. The fact that temperatures at which evaporation and condensation take place vary with pressure;
3. The fact that cold air carries in suspension much less water than warm air.

A material called the refrigerant (Freon, carbon dioxide, ammonia, Carrene or other gas), tightly enclosed, is alternately liquefied by compression and relieved of pressure, thus alternately discharging its heat outside and absorbing new heat from the air in the duct system. The chilled air in the duct system is forced to deposit its moisture, which is drained off; then the air is reheated somewhat and delivered to the room. The details of the different systems vary and are constantly being improved, but the ductwork is similar for all.

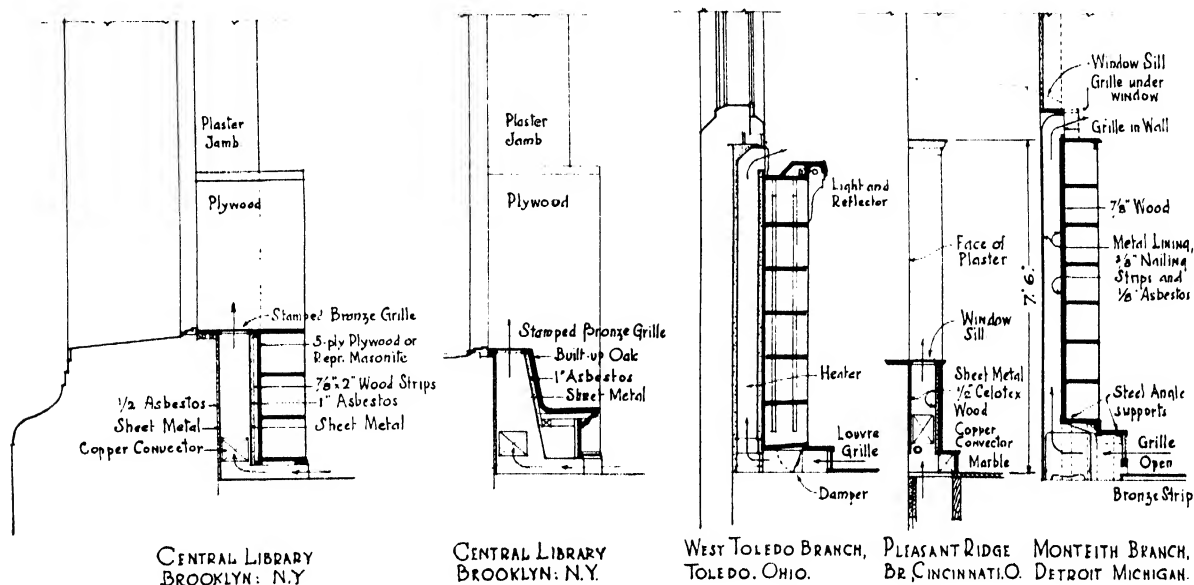
Removing Sulphur from the Air is a further process occasionally required if the book material is precious and there is much smoke in the atmosphere as in a manufacturing community. Smoke and fumes contain sulphur dioxide which combines with the moisture and oxygen in the air to form sulphuric acid that permeates

and damages the books. The reaction is $\text{SO}_2 + \text{H}_2\text{O} + \text{O} = \text{H}_2\text{SO}_4$. Most of the sulphur dioxide can be removed by adding an alkali to the water-spray of the air-conditioning system. A mixture of several sodium salts is recommended, renewed at intervals to keep the water spray alkaline.³

Temperature Control in the Important Rooms, each with its thermostat, is desirable but expensive.

Radiators are most efficient under windows, to counteract the flow of chilled air down from the glass and consequent drafts across the floor. They may be enclosed, with openings at the floor for air to enter and in the window sill for the heated air to emerge. The enclosure is sometimes of metal, sometimes of wood to match the bookshelves, and thoroughly insulated.

If a window recess is sufficiently deep, low wall-shelving can continue under the windows,



Examples of radiators or convectors in reading rooms lined with bookcases. All sections at same scale.

Temperature Control by Zones is the usual substitute unless the library is small enough for a single control. The building is divided vertically into "zones," each with its thermostat to control the temperature of the incoming air (if a duct heating system) or the radiators (if a split system); different exposures will require different amounts of heat on different days depending on sunshine, the direction of the wind, and other physical conditions. But the adjustment of the proportional heat for each floor in the zone must be exact or one floor will be too hot and another too cold.

³U. S. Bureau of Standards, Misc. Pub'n M142. Oct. 17, 1933.

the radiation concealed behind or underneath; or if the sill is high enough, regular shelving may be continuous, with the radiators behind it. Of course thorough insulation with tin and asbestos is required.

Built-in seats may be set before the radiators.

In any case the radiators and valves must be accessible. The enclosure or seat can be constructed so it can be detached and moved, or the sill-opening may be sufficiently large to lift out the radiator. Disconnection can be done through the lower opening. Light small copper radiators (or convectors) are best in such a situation.

The Steam Main in smaller libraries is usually located in the basement, hung from the

ceiling a few feet from the outside wall, making the complete circuit of the building and disfiguring every room. Several libraries have raised the base of the first story wall-shelves and placed the main below them to keep it out of the basement rooms. This brings excessive heat close to the books. Location of the steam main is an important and awkward problem.

If there is no basement under most of the building a continuous pipe tunnel can be constructed below the floor and inside the outer wall, supplying the radiators above. This protects the floors from ground moisture (Mattapan Branch, Boston).

In larger buildings provided no basement windows interfere, a passage may be partitioned off several feet wide making the circuit of the outside walls, forming a service tunnel for various pipes and ducts as well as the steam mains (Baltimore, Toledo). Or if space is available the main can be placed at the top of the building, supplying the radiators from above, the "Down Feed System" (Wilmington, Concord, N. H.).

Air Ducts for ventilation or air conditioning are expensive and very difficult to place without encumbering the building with awkward excrescences and projections. They require ingenuity and close cooperation between architect and engineer before working drawings are well under way, for supply and exhaust outlets require proper placing to function efficiently. Often they can be recessed in the tile or brick walls. Locating them is especially difficult when the ducts are to be used for hot air in winter and cool air in summer. Although a dehumidifying and cooling system may not be contemplated it is wise to plan ducts and outlets so one can be installed at some future time, and to allow space for the apparatus in the machine room.

The Boiler Room is at the lowest level, generally several feet below the lowest basement floor. It should be as near the chimney ("boiler stack") as possible, and adjoin the fuel storage which in turn must be accessible for deliveries. Important rooms and assembly rooms in par-

ticular should not be placed over the boiler room, and particularly over the fan or machine room, on account of possible noise, vibration, dust and heat. Position of equipment is otherwise unimportant, but in a small building a corner room is usually easiest to ventilate. In a large building a central position is best as the mains and ducts will be shorter and therefore smaller. Good ventilation is essential. Exhaust ventilation can be through a separate duct up the boiler stack alongside the smoke flue, or around an iron smoke flue extending up the boiler stack. The flue induces an air flow. The ample air supply needed for proper draught for the boilers generally comes through windows or louvered openings in the side wall, but can be drawn from the roof. The boiler room at Wilmington, Del., is arranged so it can draw its air from the adjoining bookstack, thus ventilating it.

Oil is the favored fuel in most recent libraries, with storage tank either inside or buried in the ground outside, according to local law. Whether the lighter grades of oil or the heavier (with pre-heaters) are best must be decided, and whether coal is a future possibility and should be provided for. Gas may be considered (Pleasant Ridge Branch, Cincinnati).

Keeping the boiler room from getting extremely hot and insulating it from the rest of the building are apt to be neglected. A hung ceiling with ventilation of the space between it and the floor above is effective but difficult to arrange. Asbestos blocks are often used. Without thorough protection the floor above is certain to be uncomfortably warm.

An Electric Generating System is seldom or never wise under present conditions in this country. Electricity can be purchased more cheaply from the public-service companies.

Unit Ventilators are advisable when only a few rooms need ventilating. For an entire building they would be more expensive than a duct system. They are compact mechanisms, generally occupying all the space under one window. They draw air from outside, filter it, mix it with air drawn from the room, heat it (or cool it),

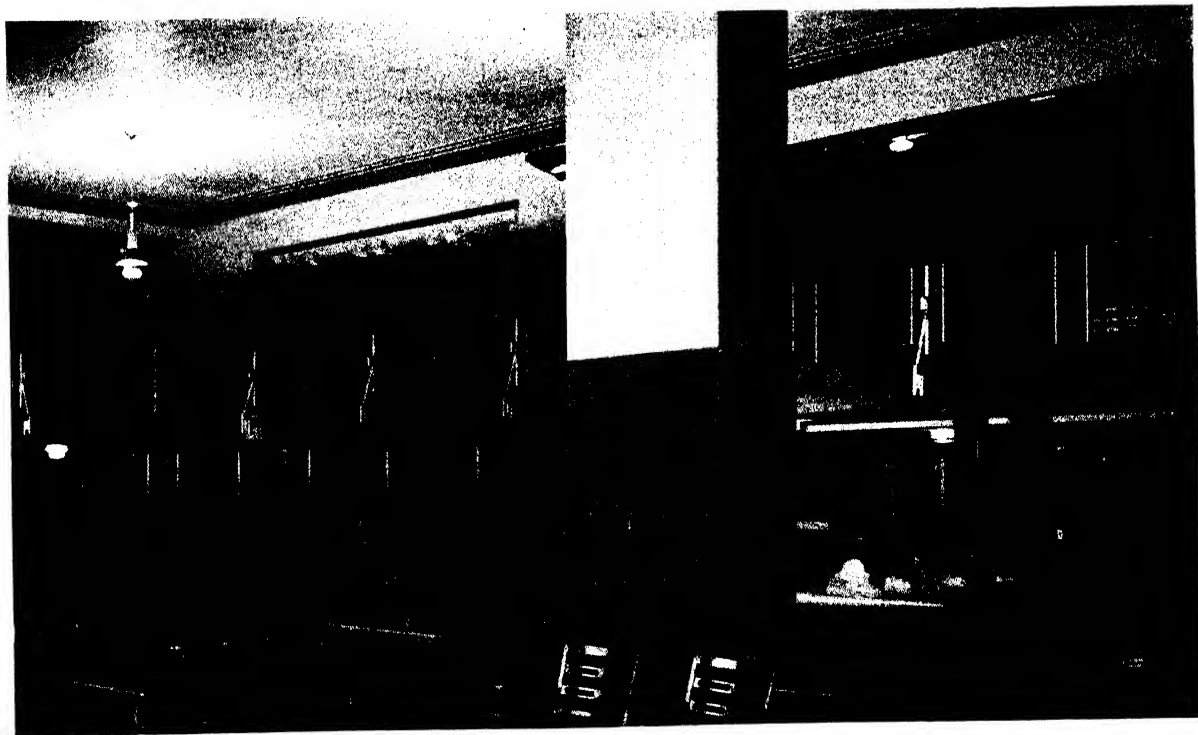
and humidify it (or dehumidify it), and drive it by a fan up past the window-glass, diffusing it with the air in the room. Perhaps their greatest disadvantage in a reading room is the slight sound of their whirring fans. They are connected to the steam and electric systems, and if humidifying is desired, to the water system.

Panel Heating, popular in England, has few examples here and no library has used it. The air in the room is kept quite cool, the inmates warmed by radiation from metal panels set in the wall or ceiling or from the plaster ceiling itself, heated by steam or hot water pipes or by

electricity. Any portion of the body shielded from the heated surface gets no heat. It is similar to the heat from an open fire in a cool room.

Public Service Steam Supply is best if available, despite its probable extra cost. It avoids the dust, noise, smells, and uncontrollable heat of a boiler room, relieves the library of one service to administer with its worries over fuel delivery; reduces first cost, and releases space in the building for library use.

Costs. See Ch. 10, Breakdown of Building Costs, for proportion of mechanical equipment cost to general building cost.



In the next chapter, bookstacks are discussed. Previously, in Ch. 15, and at other points, we have emphasized the value of mezzanines adjacent to public departments, especially when they can adjoin service desks. They give convenient, badly needed space for books, staff or readers. Toledo's main floor has an unusual proportion of mezzanine, as in this view of general reference room with two sides of its U-shaped balcony. Note low and high index table. They and reading tables have inlaid linoleum tops.

The designing of two level stacks opening from public rooms, with balconies and railings, gives the architect opportunity for interesting interior details. See also the interior view at De Kalb, p. 139.

CHAPTER 40: THE LIBRARY BOOKSTACK: CAPACITIES AND DETAILS

(See Chapter 15 for location of book collection in the building plan)

IT WOULD BE FRUITLESS here to attempt to tell in detail how bookstacks should be built. Their construction is continually changing. New needs arise for which new techniques must constantly be perfected. The stack engineer is ever on the quest for better methods of storage, greater conveniences for staff work among the books, and better facilities for readers, who now more than ever before have freedom to look up the books they want and to read them where they find them. The four companies which pioneer and specialize in this technical field issue bulletins of details.

Consequently, this chapter will deal only with stack building trends and some of the fundamental definitions, size and space standards, mechanics and functions.*

HISTORICAL NOTE

The first true bookstack came into being in 1877 when Gore Hall was built for the Harvard University Library. In this revolutionary structure its great book storage room was packed with parallel ranges of shelving side by side and one over the other in five levels, until every cubic foot of space from basement floor to roof and from wall to wall was efficiently used either for book storage or access to the books—*but for nothing else*. The entire structure except the shelves was of cast iron and steel. The vertical supports not only carried the shelves but also the flooring of the aisles between the ranges and the superimposed stack stories. The resulting gain in economy, compactness, and fire safety was hailed as a great advance, and the “bookstack” system was copied all over the world in spite of its inflexibility—being suitable only for storage—and its limiting of reader contact with the books. These handicaps continued for nearly

half a century, but they are now being rapidly eliminated in modern libraries. Without any loss in economy and safety of book storage, stacks may now provide not only for reader access and study but also for any kind of staff work that can be most efficiently carried on close to the book collections.

DEFINITIONS

To clarify the following pages a paragraph on bookstack nomenclature will be useful. The smallest unit of a bookstack is the book *shelf*, supported by *shelf supports* which may be either the full width of the shelves, or compact central *columns*. A vertical series of shelves, or the space for them, between two shelf supports, is known as a *section*, or *shelf compartment*.¹ A series of sections, end to end, constitute a *book range*. *Range aisles* are provided between ranges to give access to the shelves. These are connected transversely by *main aisles*. Shelf compartments and ranges with shelves and access aisles on both sides are called *double-faced*. When against a wall or accessible from only one side they are called *single-faced*, or *wall ranges*. A *tier* is a series of ranges on the same level. Tiers are superimposed one above the other, the shelf supports of the lower tiers carrying those of the superimposed tiers and also the floors between the tiers, which are known as *decks*. When a tier is left incomplete, that is, without shelf supports, shelves, or other detachable parts it is said to be “*stripped*.”

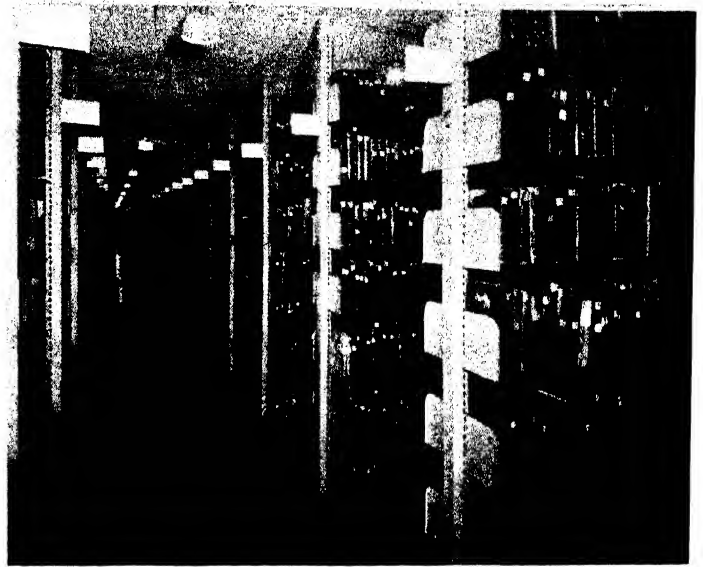
*This chapter is supplemented by booklets published by the four stack companies, including an important 42 page book: *Snead Bookstacks*, 1940, published by Snead & Co., Jersey City, N. J. It contains 73 illustrations. See also Chapters 15, 23-33, for location of book collections in the building plan.

¹See R. W. Henderson, “Bookcase nomenclature.” *Lib. Jour.* 61:53, Jan. 15, 1936.

There is enough uniformity in the size of books to make possible a standardization of stack units and spacings. Bookshelves are regularly 3 ft. long, measured from center to center of shelf supports, and approximately 8, 10, or 12 in. wide. Other sizes are special. Shelves for bound newspapers and folios may be wider—18 in. or 22 in. and about 28 in. long, center to center. Double-faced book ranges, therefore, vary in approximate nominal widths from 16 in. to 24 in., and newspaper ranges from 36 in. to 44 in. However, it is not now considered good practice in multiple tier construction to provide special width ranges or compartments shorter than 3 ft. for bound newspapers, as such construction inflexibly prevents rearrangement. The latest systems of shelving permit efficient and flexible storage of both books and folios without special spacing of the shelf supports. See "Shelves."

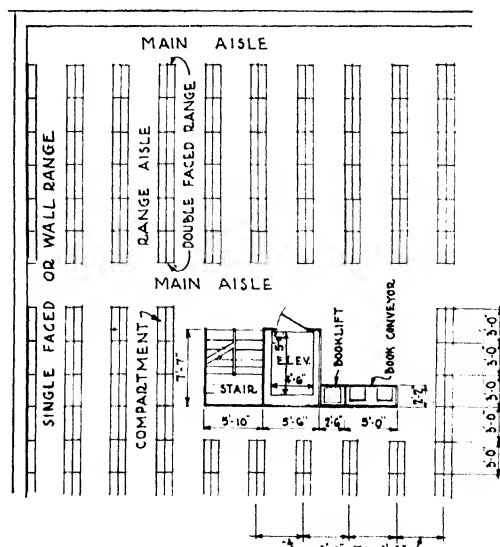
Stack tiers are made 7' or 7' 6" high from floor to floor—preferably the latter, to permit the full complement of 7 rows of books. Special tier heights can be supplied when required by local conditions. An 8' height is becoming popular on account of the growing use of bookstacks for reading and staff work. Building story heights should be even multiples of stack tier heights so that each building floor will line up with a stack deck and facilitate access by persons and book trucks. It is customary to equip each tier with seven rows of shelves.

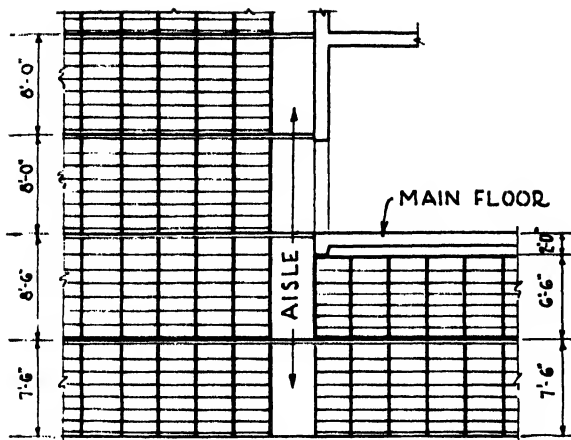
Misunderstanding of the proper relationship



between theoretical ultimate capacity and working capacity has caused much grief to librarians and architects through the overestimating of bookstack capacity and later crowding.

Bookstack plan with terms and dimensions. Showing types of vertical transportation.





Section through a bookstack showing tier-heights adjusted to story heights of the adjoining part of building. Courtesy Sncad and Co.

quently there must be empty spaces throughout the bookstack to take care of expansion. Therefore, in an active, growing library it is never feasible to have the shelves completely filled. In fact, in a new library stack one-half or one-third of the shelf space should be vacant. Long before this vacant space is completely filled up, inconvenience due to the overcrowding of certain sections makes it necessary to provide space for them by shifting the books in adjoining sections. By the time vacant shelf space averages 10% or less the library is faced with an immediate expansion problem for which the foresighted architect and librarian should already have made provision.

To compute stack space accurately one must know the proportionate number of octavos, quartos, folios; of general reference and technical books; of bound periodicals, documentary reports, newspapers, etc.

An attempt at such accurate calculation is impracticable during the sketch-plan stage of a building and of doubtful benefit later, for the exact growth of a library cannot be predicted. One can be fairly safe in computing practical working capacity of the stack at an average of about 6 volumes per linear foot of shelf, 250 volumes per double-faced compartment, 19 volumes per square foot of deck area, or $2\frac{1}{2}$ vol-

umes per cubic foot of stack space. The square foot and cubic foot figures are based on the inclusion of the stacks and range aisles only. Space for main aisles, carrells, offices, stairs, elevators, conveyors, etc., must be added.

The figures are derived from this calculation:—

4'4" between rows of columns, times 3'0" c. to c. of columns=13 sq. ft. per compartment

13 sq. ft. times 7½ ft. deck to deck=97½ cu. ft., say 100 cu. ft.

3'0" ft. shelf times 7 shelves high times 2 shelves back to back=42'0"

42'0" times 6 vols. per foot=252, or 250 vols. per double-faced compartment

250 vols. divided by 13 sq. ft.=19 vols. per sq. ft.

250 vols. divided by 100 cu. ft.=2½ vols. per cu. ft.

Note that the figures above are for *working capacity*. When a stack actually contains 250 volumes per double-faced compartment it must soon be enlarged, though with shelves tightly filled, it would hold an average of 7 volumes per running foot, an *ultimate capacity* of 300 volumes per double-faced compartment.

These figures have to do with stack collections; the calculating of open shelving in reading rooms is quite a different matter, discussed in Ch. 15.

The table on page 415, of ultimate capacity, has been prepared for stack estimating.

THE "CUBOOK"

Robert W. Henderson² of the New York Public Library has made a thorough research into the problems of book sizes and space requirements, and has developed a unit of measurement of stack capacity known as the "Cubook."

He defines a Cubook as "the volume of space required to shelve the average size book in a typical library," with allowances for the essential vacant shelf space. A single-faced section or

²For discussion and more detailed formulas, see R. W. Henderson, "The cubook: a suggested unit for bookstack measurement." *Lib. Jour.* 59:865-868, Nov. 15, 1934; "Bookstack planning with the cubook." *Lib. Jour.* 61:52-54, Jan. 15, 1936.

TABLE 1
SPACE REQUIREMENTS FOR VARIOUS CLASSIFICATIONS OF BOOKS¹
WHEN SHELVES ARE FILLED SOLIDLY WITH NO OPEN SPACE

Kind of Books	Volumes per Foot of Shelf	Volumes per Lineal Foot of Single-faced Range	Volumes per Lineal Foot of Double-faced Range	Recommended Width of Shelves
				<i>inches</i>
1. Circulating (non-fiction).....	8	56	112	8
2. Fiction.....	8	56	112	8
3. Economics.....	8	56	112	8
4. General literature.....	7	49	98	8
5. Reference.....	7	49	98	8 10
6. History.....	7	49	98	8
7. Technical and Scientific.....	6	42	84	8-10-12
8. Medical.....	5	35	70	8-10
9. Law.....	4	28	56	8
10. Public documents.....	5	35	70	8
11. Bound periodicals.....	5	35	70	10-12
12. U. S. Patent Specifications.....	2	14	28	8
13. Art (not including large folios).....	7	42	84	10 12 (12-14" high)
14. Embossed for blind.....	4	24	48	15 (15" high)
15. Bound newspapers, usually stored flat, are discussed later.				

¹ Based on a table which appears in *Snead Bookstacks*, 1940, p. 36. The figures are in general scaled down from those appearing in Snead and Co.'s *Library Planning, Bookstacks and Shelving*, 1915, p. 71. Items 12-14 have been added, and a few changes made by the present authors.

compartment 3 ft. long and 7½ ft. high has the following capacities:

100 Cubooks³ (85% octavos, 13% quartos, 2% folios)

117 Volumes (87% octavos, 13% quartos)

132 " (Octavos only)

67 " (Quartos only)

12 " (Folios only)

Thus a stack to house a miscellaneous collection of 100,000 books should have 1000 single-faced compartments. If folios are eliminated, then we divide the 100,000 by the factor 117 and get 855 compartments, and so on.

³ Since a single-faced compartment contains 21 linear feet (less shelf-ends), the cubook allows about 5 volumes per foot for the typical library collection. A double-faced compartment would house 200 such average library volumes, which may be compared with the 250 volumes we suggest as working capacity.

Rough estimates of the size of a stack may be made by allowing 1.5 (more exact 1.47) cubooks per cubic foot of stack, or 11 cubooks per square foot of floor area. Therefore a stack holding 750,000 cubooks would require approximately 510,204 cubic feet, and 68,181 square feet of floor area. These figures include allowances for ranges and range aisles, main aisles, stairs and elevators but not carrells.

COSTS

The question as to how much a bookstack costs is no easier to answer than the question of how much a library costs; time, place, size, design, and equipment each have their influences. An accurate estimate can be arrived at only by taking off detailed quantities from actual plans. Square-foot and cubic-foot costs are unreliable and misleading unless used with judgment by

stack experts. In 1940 a figure of 45 to 50 cents per cu. ft. of stack room bulk would be a fair basis for rough estimates, but local conditions would often make it considerably higher or lower.

FOUNDATIONS

Although the foundation loads from bookstacks are relatively heavy due to the close packing of the stack space with shelving and books, these loads are distributed over such large areas that their support is not a difficult problem. Where the stack columns are spaced at intervals of 3 ft. by about 4 ft. 6 in. in the other direction, the simplest foundation solution is a reinforced concrete mat over the entire stack room area. Where the stack columns are spaced at intervals 4 ft. 6 in. by 9 ft., or 9 ft. by 9 ft. as is customary in convertible construction, separate piers are used under the individual columns.

In figuring foundation loads the following unit weights are generally assumed:

For books, shelves, and shelf supports, 30 lbs. per cu. ft. of stack range, measured from floor to ceiling, and face to face of both shelves, the aisle not included.

For deck floors of steel plate construction, 12 lbs. per sq. ft. of entire deck area.

Where marble deck floors are used, about 4 lbs. should be allowed for the steel deck framework over the gross area of the stack room and 18 lbs. per sq. ft. for the net area of the marble.

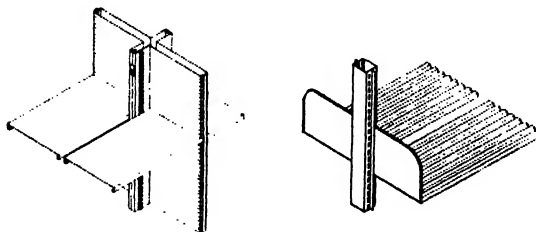
For concrete floors $3\frac{1}{2}$ in. thick the load allowance should be 45 lbs. per sq. ft. of gross area.

The live load of people and furniture on the deck floors is figured anywhere from 40 to 100 lbs. per sq. ft. of aisle area, depending on local regulations. Forty lbs. is usually ample.

ENGINEERING

Sometimes a bookstack is installed in a completed room as an item of equipment but in a large library the stack is usually a specially engineered structural entity carrying its own floors and perhaps also bracing the surrounding walls and supporting a main floor or roof overhead.

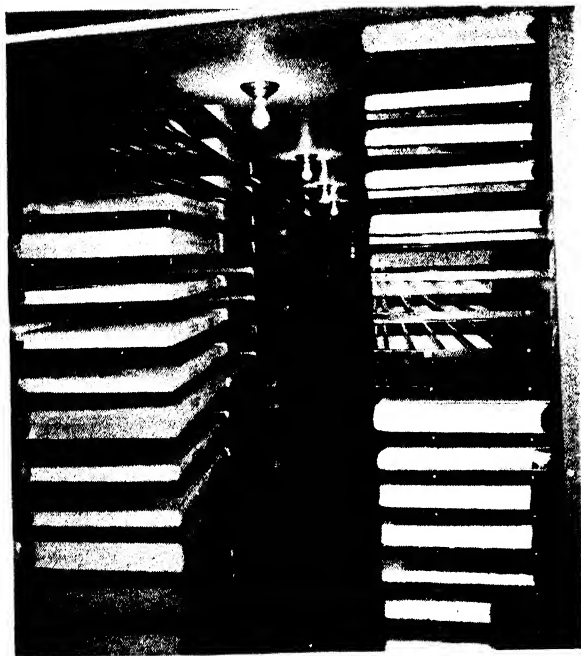
The first floor of a library is often carried on a basement stack to secure compactness, and eliminate heavy structural steel and a foot or two of extra excavation. It is frequently found advisable to erect the stack structure ahead of the surrounding walls so that the stack framework can be used as scaffolding for the construction of the walls. The stack structural members are then built into the masonry to secure a compact and neat relationship. The structural use of the bookstack is economical both as to cost and space and in only a few cities do restrictive building codes cause difficulty. Most up-to-date officials responsible for the interpretation of building regulations realize that books on metal shelves are highly fire resistant, in fact almost non-combustible, and are therefore willing to approve the structural use of exposed steel work in bookstacks even though it would not be allowed in other portions of a building where more serious hazard is involved.



A. Detail of a recent form of standard stack support and shelves with method of attachment. B. Detail of bracket stack support and shelves with method of attachment. Courtesy Snead and Co.

The fabrication of stack members requires great accuracy for the proper intermembering of interchangeable equipment and full use of space. Typical of this necessary accuracy can be cited the many large stacks where the overall dimensions of the stack structures—as great as 300 feet—were held to plus or minus one-eighth inch. This insures perfect functioning of all the stack unit parts, such as shelves, shelf supports, closed ends, desks, carrells, partitions, dividing screens, temporary doors, etc.

The bookstack tower is being used more and more frequently to provide for stack expansion in an upward direction into ample light and air,



Bracket type stack with new row type folio shelves, without ends, for continuous horizontal storage of bound newspapers. Courtesy Sncad and Co.

and also to mark the commanding importance of the library. Stack towers as high as fifteen, twenty, or even thirty stack tiers have been built, as at Texas and Rochester universities, and from an engineering point of view they might be even fifty tiers high—either put up complete at the outset or in successive sections. It is questionable whether, from the viewpoint of public library planning, these vertical storage towers have a place in any except the half dozen largest cities in the country, for reasons discussed in Ch. 15.

DECK FLOORS

The earliest stack deck floors were made of perforated cast-iron plates, later superseded by rough plate-glass slabs, $\frac{3}{4}$ " thick, supported on steel framework. On account of their fragility and unsightly appearance, glass deck floors were supplanted by deck floors made of slabs of light-colored marble $1\frac{1}{4}$ " thick. In each case the flooring extended only over the aisle area, leaving the space under the ranges open so that the entire stack room could be ventilated as one unit

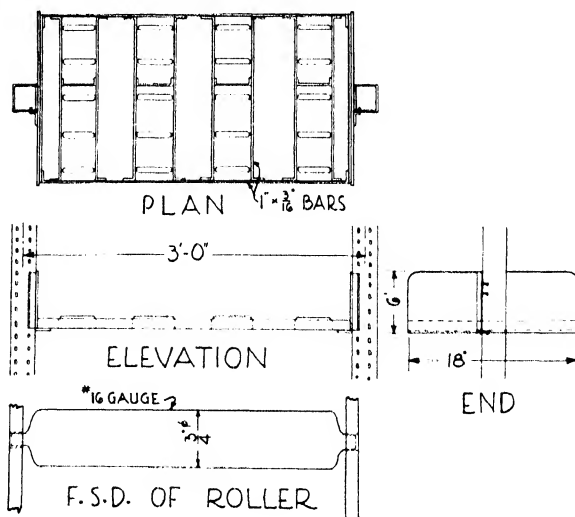
and not as a series of separate stories. With improved systems of ventilation it became desirable to take care of each stack tier separately and, consequently, the deck floors were made continuous over the entire stack room area.

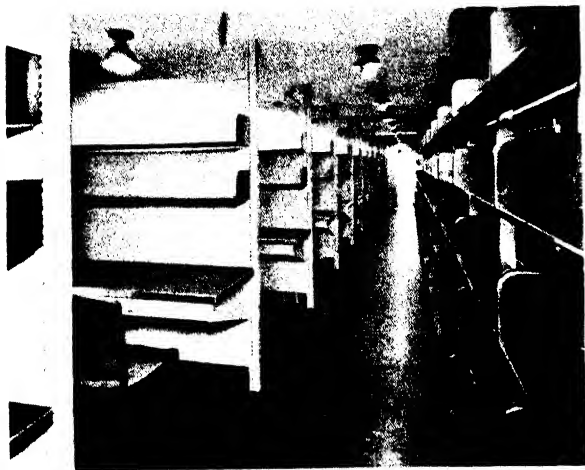
For continuous deck floors, monolithic concrete slabs or formed steel plates are employed, the latter being preferable on account of their greater lightness, resilience, and adaptability. With both concrete and steel deck floors the walking surface is generally protected with resilient tile such as asphalt, cork composition, or rubber.

SHELVES

In general, the stacks are divided into two classes—standard and bracket. In the standard stacks the shelves are supported for the full width of their ends by wide shelf supports, which form enclosed end panels, and make a very neat finish generally considered preferable where appearance is important, e.g., when visible from a reading room. But the shelf supports prevent an interchange of shelves of different widths. In the bracket system of construction the shelf supports consist of perforated square tubular columns. The shelves are carried canti-

Roller shelf for bracket type stack. Bracket shelf ends have hooks to engage in one side of steel stack uprights. Rollers of 16 gauge with ends shaped into pins, engaging in holes punched in cross bar.





Carrells at Morgan College. Few public libraries have an expanse of stacks large enough to permit using outside wall space for so limited a purpose. Probably a few such isolated, day-lighted alcoves could be tucked away under supervision, if an effort were made. Bracket work-shelf, bookshelf, and panel partition can be inserted in regular stack uprights. Indirect light fixtures would be better in the carrells. At University of Michigan some privacy is given by shelved steel cupboards about 4' high against the aisle. Carrells should be at least 3' x 4'. Taylor and Fisher, architects. 1939. Courtesy of Art Metal Construction Co.

lever fashion by brackets hooked into perforations and projecting out from the columns. The bracket stack is usually somewhat less costly than the standard and is more adaptable to changing conditions; shelves of any width and purpose are interchangeable just so long as the length is the same. Closed ends are available to be attached to range ends, for appearance.

The shelves themselves are made of a plain flanged sheet of steel or a series of parallel bars bound together at the end and at intermediate points. The sheet steel shelves are widely used with satisfaction, though less convenient for the use of book supports, a most important feature of any well-administered library. Where folio volumes or newspapers are to be stored lying flat, shelves of special width are required and if the construction is of the bracket type, the brackets or ends must be quite low to permit close adjustment of the shelves. The brackets for these wide shelves are of a slender L-shape and

do not separate the ends of adjoining shelves; there is thus an uninterrupted surface on which volumes of any length may be placed with no loss of space, regardless of uprights.

The shelving in the stack should include 15% of 10" width, and 10% of 12" width, for the usual needs, including provision for unbound magazines in profusion. Every library runs short; order 5-10% extra of each size.

DESIRABLE ACCESSORIES

The following items should be checked for inclusion in the stack specifications and contract:

Bronze card frames about 3" x 5", attached flat to the ends of ranges.

Range indicators projecting at right angles from the top of the ranges to indicate number or class.

Book supports (as many as there are shelves) to keep the end books from toppling over into the empty shelf space provided for future additions to the stock.

Shelf label holders attached to front edge of shelves; desirable in portions of stack accessible to the public, but not otherwise necessary.

Sliding reference shelves which can be drawn out into the aisle and used for consulting books where shelved.

Table or desk shelves adjustable at either standing or sitting height for study or work in the stack room.

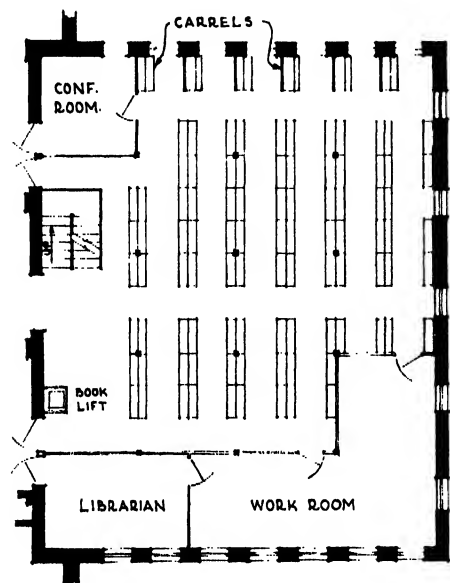
Sorting shelves, preferably slanted backward so that circulation and public department pages can sort and redistribute returned books with least wear and tear; best placed adjacent to elevators, conveyors or book lifts. Add padded backs or strips to protect the books bumped against them.

Grill or sheet panel screens, of bookcase height, to be bolted or otherwise installed between uprights, for enclosing locked space assigned to rare, reserved or other special materials.

CARRELLS

For years, stacks were used simply for storage purposes. No facilities were provided for re-

search workers or members of the library staff who might find it convenient to work in the stack room. Gradually, however, the possibilities of using the stack room for purposes other than storage became more evident; when the Widener Memorial Library at Harvard was built, a forward step was taken in the provision of several hundred study carrells extending along the window walls of the various stack tiers. The demand grew into a waiting list of applicants. In other libraries makeshifts were utilized for a similar purpose, as for instance in



Plan of convertible stack with 9' x 9' column spacing, the intermediate shelf supports removable. A spacing of 4' 6" x 9' would be almost as useful and cost less. Rockford College, Rockford, Ill.

the New York Public Library where window embrasures have been filled in and equipped with tables and desks.

As stack space is determined by the vertical units (see accompanying diagrams of spacing), a 4' 4" square, or even the usual 3' x 4' 4" is sufficient. Good carrell lighting may be assured by placing an *indirect* fixture a little to the left of the center line and a foot to the rear of the writing shelf, to throw light over the reader's left shoulder.

WORK SPACES

Analyses prove that working and reading accommodations can be provided within the stack area at a cost per square foot of only about half the cost in rooms with high ceilings. There is a further saving in heating, ventilating, and cleaning. Furthermore, the fact that readers and staff can work close to the books lessens the burden of transportation and service.

CONVERTIBLE STACK

The new "convertible" stacks are adaptable for either readers, staff workers, or books. The deck floors extend continuously over the entire stack area, but two thirds of the stack columns are made non-structural and removable, and the entire stack load is carried on columns spaced about 4' 6" apart in direction perpendicular to the stack aisles and 9' apart in direction parallel to the aisles. Thus shelving can be replaced by working tables, other furniture, or aisles. In the new Library of Congress Annex Building it is possible to provide anywhere within the stack area a working area about 9' wide and as long as desired, up to 150 ft.

In stacks of only a few tiers, where the loads are not excessive, it is possible to space the structural columns about 9' apart in both directions. But such wide spacing is seldom necessary; few purposes are served by the 9' x 9' arrangement not equally well and more economically served by the 4' 6" x 9' arrangement.

It is constantly being found that more and more library elements can be accommodated in these convertible areas: staff offices, study spaces, special collections, discussion groups, receiving, shipping, accessioning, cataloging, magazine and document handling, mending, preparation of shipments to branches, stations, and schools, etc. They may be shut off from the book storage areas by wire grilles or closed partitions, in interchangeable units readily attached to the stack construction. Units may retain their functional simplicity or have a special design and color.

With the convertible construction, there is a



Detachable bracket shelves like these, 12" x 36" with linoleum tops, can be set up anywhere in the stacks, 30" high for student or staff worktable, or 36" to 42" for a counter for making up book shipments. Back to back, a pair make a work surface 3 ft. square.

tendency to establish an 8' height from deck floor to deck floor instead of the usual 7' 6", thus providing a little more space overhead. Increasing the spacing of the deck floors by 6 inches, or $6\frac{2}{3}\%$, increases the cost of the stack construction only 1%, not including the additional cost for exterior walls.

COMMUNICATIONS

The matter of adequate communication becomes more important as bookstacks grow in size. Even in the simplest form of stack there must be not only aisles between the ranges and main cross-aisles connecting these range aisles, but also stairs extending in short runs from deck floor to deck floor.

STACK STAIRS

The various decks of a multiple tier book stack

must be accessible by means of stairs even though there may also be an elevator in the stack room. It is seldom possible to plan a building so that a stairway outside of the stack room will also serve the stack. Therefore the stack stairs can be designed solely to meet stack needs. In general only two types are utilized—straight runs from deck to deck and return runs. The latter are preferred as they are more compact, require less walking, and are more easily enclosed. The return run type makes it possible to install a double swing door on the landing, both to prevent air circulation through the stair shaft and to close off one or more tiers.

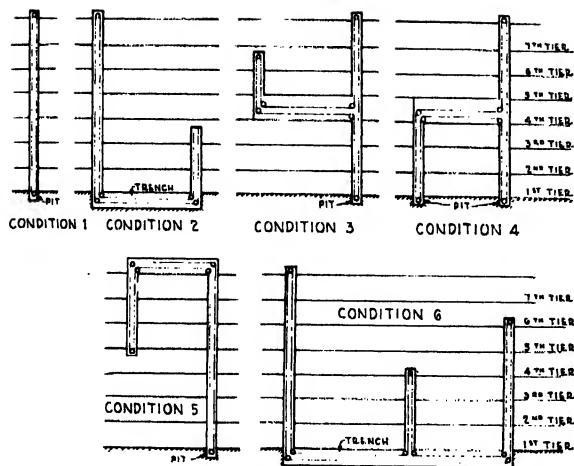
Stack stairs are generally made about 2' 6" wide and there are usually 12 risers for the 7' 6" height from deck floor to deck floor. The inside dimensions for the shaft of a return run stair are about 5' x 7' 0" and the outside dimensions with steel panel enclosure 5' 4" x 7' 2".

STACK ELEVATORS

In any large stack of more than two tiers there should, if possible, be an automatic electric elevator controlled by push buttons; car at least 3' 8" wide x 4' 6" deep, inside measures, the minimum to accommodate both persons and book trucks; and with a shaft about $5\frac{1}{2}$ ft. x 6 ft. outside measurements (door on short side). The safe operation of the elevator is aided by a folding gate or two-speed door at the car entrance and a hinged or sliding door at the shaft opening, both of which must be closed before the car will move. The enclosure is best made of insulated steel panels for compactness and to harmonize with the stack construction.

CONVEYORS

Where the size and activity of a library are such that the delivery-desk attendants cannot efficiently get remote books, it is advisable to station stack attendants at different levels to dispatch the books to the delivery desk by automatic book conveyor. This greatly speeds up the service to the readers and saves the delivery-desk



Book conveyor, showing adaptability to six conditions of vertical and horizontal runs. It may also have portions turned at an angle. Carriers attached to a moving endless chain receive the books as they ascend, and deliver on their descent. Courtesy Sneed and Co.

personnel from exhausting messenger work.⁴ A book conveyor consists of an endless chain, driven constantly or intermittently at a speed of about 60 ft. per minute by an overhead motor, and supporting book carriers spaced at intervals of about 8 ft. along the entire length of chain. There is usually a conveyor station at every stack level as well as at the delivery desk. Thus a continuous stream of books may pass from any station to any other station, the discharge being automatic and gentle. Each car carries a set of signals; as the books are loaded these are automatically set to indicate their destination. A signal gives warning when the conveyor starts after a period of inactivity, and safety devices stop all machinery whenever there is an obstruction in the shaft. Unlike elevators and book lifts a conveyor can travel horizontally as well as vertically and can be used simultaneously by a number of people. Two-way travel, makes it possible to locate a conveyor in the center of a stack room and still have it serve one or more delivery desks beyond or above the stack area. A conveyor shaft enclosed with insulated

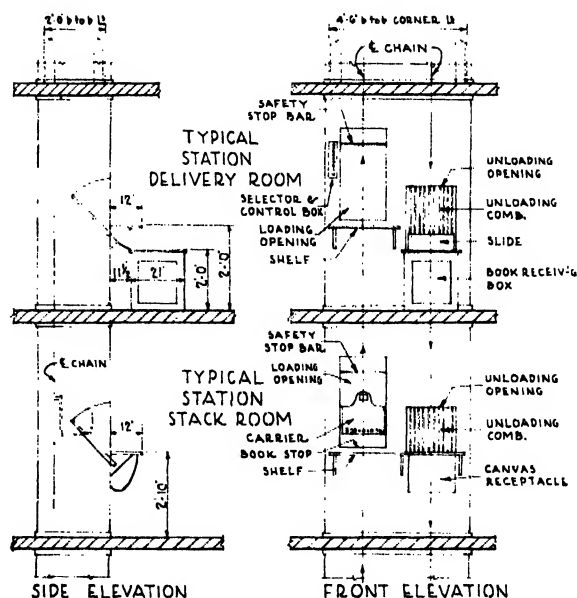
⁴On an average day at N. Y. Public Library the conveyor from the multi-level stack to the reference room desk operates 13 hours and carries from 6,000 to 9,000 volumes, about 7 to 11 vols. a minute.

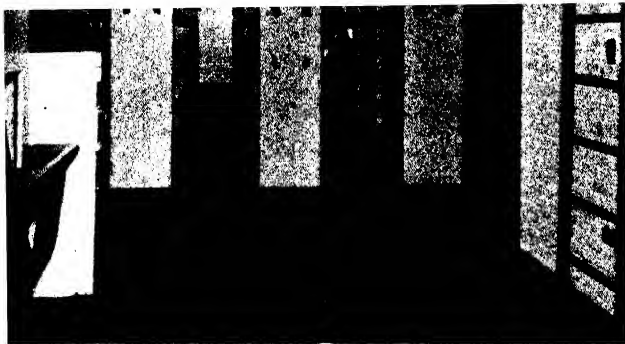
steel panels should be about 2' x 4' 6" for vertical runs, and 2' wide x 3' high for horizontal runs, outside measurements.

BOOK LIFTS

The carriers on a conveyor are of such size that books larger than 12" x 15" cannot be properly accommodated; they must be carried either by hand, by the automatic passenger elevator, or by an electric dumb-waiter or book lift. Hand-power book lifts are unsatisfactory except for light, short service; they are either too slow and laborious in action or else inadequate to carry a load. Electric book lifts should be made large enough to carry large folios or bound newspaper volumes, about 20" deep x 30" wide inside of

Book conveyor with selective automatic return, showing typical loading and unloading station in a stack-room and another combined station in delivery room. Book conveyors are most effective for vertical installations; though horizontal operation is practicable it is not easy to get sufficient head clearance under the usual 7'6" or 8' stack ceiling. For stacks with considerable horizontal spread and not over 15 ft. above or below readers, costs for page help on the various levels should be compared with costs for having pages carry books direct, and often more quickly, from shelves to reader, using frequent stack service stairs. Courtesy Sneed and Co.





car. If the shaft occupies valuable space in a reading room or workroom, or no folios are likely to be carried, 15" x 20" will be considerably cheaper and meet the need. The shaft should be fully enclosed and have a sliding counterbalanced door to guard the access opening at each stack tier.

If the book lift is in the steel stack structure, the enclosure should be of sheet steel, properly insulated. If local fire regulations call for the thick terra cotta tile structure which is so ugly and space consuming, a special ordinance should be requested to permit the usual sheet steel enclosure which is practically fireproof. As with a conveyor or an elevator, the machinery is best located overhead. The book lift car is provided with one, possibly two, shelves and is controlled by push-buttons, at each tier, one to call the car, and others to dispatch it to any other station. Automatic devices to prevent interference with the travel of the car while it is en route are important; otherwise the books do not reach the destination when expected. If the book lift of a library is in constant use the attendants waste much time in waiting for the car to be free and available. Therefore, it should not be depended upon to take care of routine book transfers. Electric book lifts from a basement stack can be arranged to discharge under a circulation desk of the usual height, placing the machinery at the foot of the shaft.

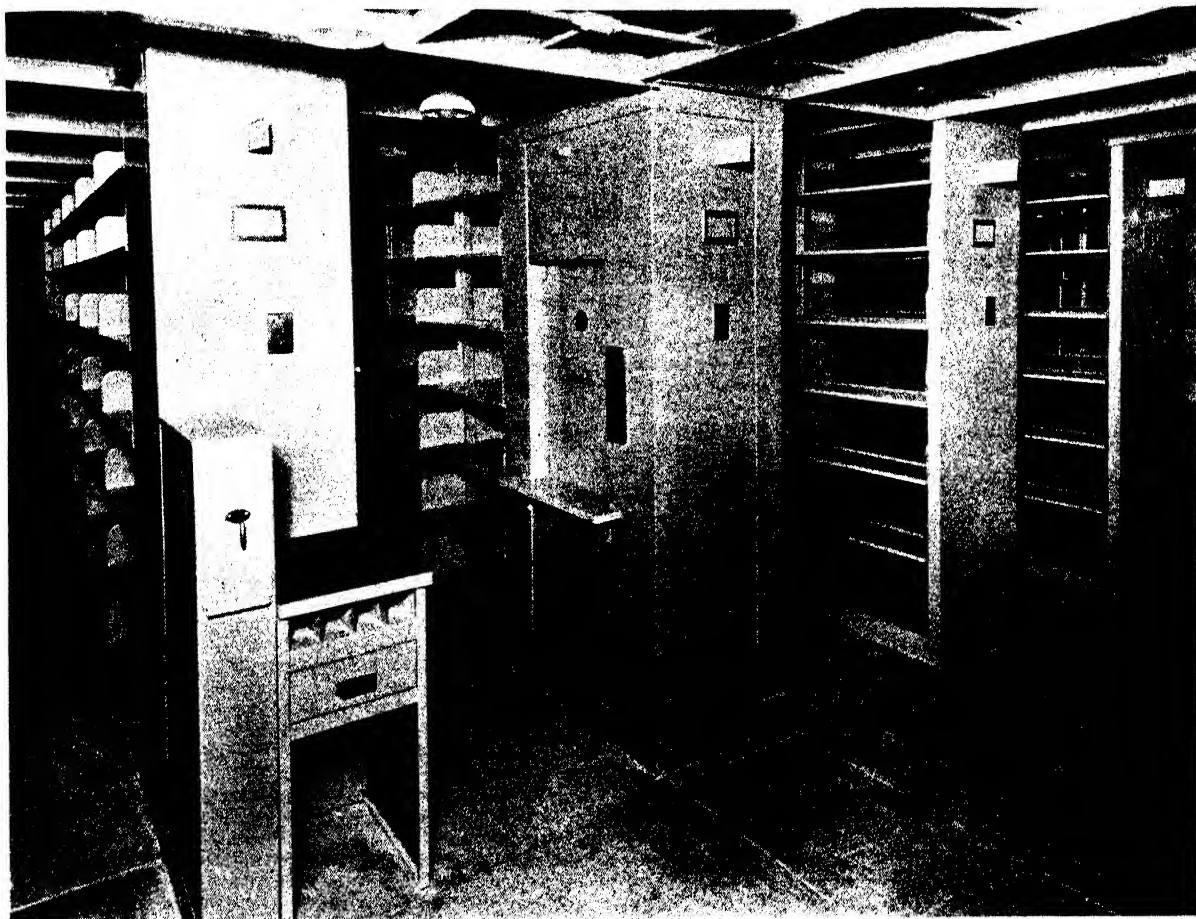
PNEUMATIC TUBES

In a large library book calls can be sent quickly and efficiently from the delivery desk to the stack tiers by pneumatic tubes with outlets located at the delivery desk and stack deck control stations. The tubes may be 1½" or 2¼" inside diameter, the former being the more economical and quite satisfactory for typical 3" x 5" call slips. There must be a separate tube for each receiving station, but a common tube will serve for returning carriers from a number of stations to the delivery desk. The motor and blower required for operating the pneumatic systems should be placed near the delivery desk, but well insulated against noise.

The use of pneumatic tubes has now been extended to include the transfer of books between the old and new buildings of the Library of Congress, located nearly a block apart. Four large elliptical tubes accommodate carriers big enough to take several books up to eleven inches in width. The time consumed in traveling between the main control stations of the two buildings is only 45 seconds. By this means two great book collections, physically separated, are conveniently unified.

TELEPHONE AND TELAUTOGRAPH

Telephone connection between the delivery desk or public catalog and the various stack stations is advisable but should not be depended upon to transmit book calls. Another electrical device, the telautograph, can serve that purpose by automatically rewriting the message of the delivery desk attendant on a tablet at the station of the stack attendant, who need not be there to take the message. In that respect it has the advantage over the telephone. Where conditions of cost, maintenance, and library administration make it possible, the telautograph can be used instead of the pneumatic tube, but with this disadvantage—with the telautograph, it is hard to fix the responsibility for a wrong book delivery. The telautograph requires wiring connections, but the equipment is installed on a monthly lease basis of about \$10 rental per sending and receiving.



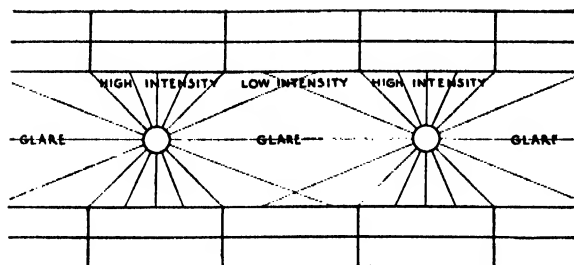
Bracket type stack with attached panelled ends; showing pneumatic tube stations and automatic book lift. Department of Interior Library, Washington, D. C. Courtesy Art Metal Construction Co.

ing station, plus \$6 rental for each additional receiving station.

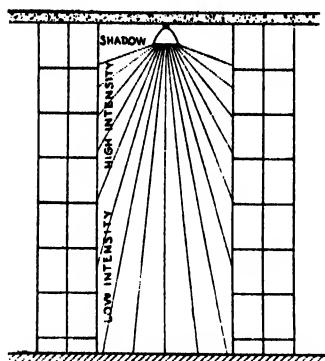
STACK LIGHTING

The lighting of a bookstack is a unique and rather exacting problem because the stack space is so closely packed with rows of ranges separated by narrow low-ceilinged aisles that both natural and artificial lighting are difficult. In the earliest bookstacks the attempt to provide natural lighting by a small window opposite every stack aisle was ineffectual because of the long, low aisles and the curvature of the backs of the books. Artificial light has superseded it. Where planning and administrative requirements permit, it is good practice to build a stack

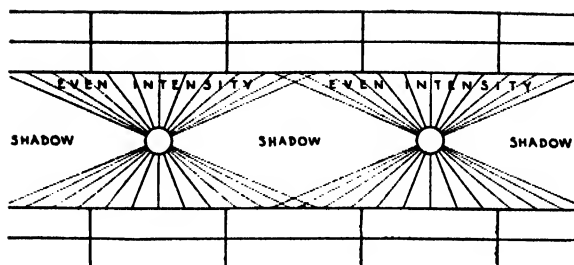
room without any natural light whatsoever, as for instance the great core stacks of Richmond, Fort Worth, Los Angeles, or the Library of Congress Annex, and the basement stacks of Toledo, Rochester, Concord or Baltimore. When proper attention is paid to artificial illumination such windowless stacks are cheerful and have many advantages in control of light, heat, and ventilation and in centralness of location. Also in economy of construction, for the stack can occupy space which in a large library would otherwise probably have to be devoted to a light court. It is possible to surround such a windowless central stack with the various reading and service rooms which require natural light and which are benefited by close contact with the main book store.



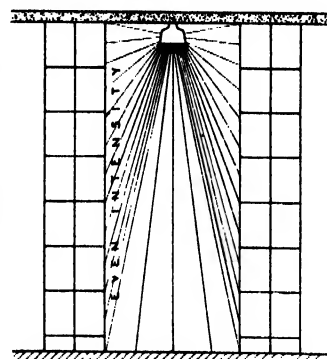
WRONG



1. Harsh glare in aisles
2. Uneven light distribution
3. Not enough head-room
4. Collects dust—efficiency varies
5. Bulb replacement sometimes difficult
6. Hard to clean—easily broken



RIGHT



1. No glare in aisles
2. Ample, controlled light
3. Maximum head-room
4. Does not collect dust—efficiency constant
5. Bulb replacement without removal
6. Easy to clean—unbreakable

Stack aisle lighting showing diffusion from an ideal reflector in right-hand diagram.

If a library plan locates a stack room with one or more outside walls, it is usually advisable to provide windows but also to keep the books well back from the windows and utilize the intervening, naturally lighted space for readers or staff work.

To properly illuminate the titles on the curved backs of books in a stack room is a difficult problem. Special reflectors are required. First of all these must shield the eyes from the glare of bulbs which may be as close as two feet from the eyes. The reflectors must also reduce the amount of light on the nearer books in order to build it up on the more remote books—particularly those down near the floor and half way between sources of light. Without reflectors these books may receive only 2% as much light as falls on the nearer books. This wide variation, if also accompanied by glare, is beyond the power of rapid accommodation of the human eye. The reflectors must, naturally, be of such design that they will not readily gather dirt, can be quickly cleaned, permit the easy replacement of bulbs, and resist breakage.

In stack rooms it is customary to use bulbs of

50 or 60 watt capacity spaced at intervals of about 6 ft. in the range aisles and 20 ft. in the main aisles. The main-aisle switches are best located at the points of access to the stack as well as adjacent to the stairs and elevator; and stack-aisle switches on the ends of the ranges. Two-way switches on opposite ends of the same range are advisable where persons may go into an aisle at either end. Double switches on alternate ends are better than single switches on each end; with the former it is immediately evident which switch controls the light in a certain aisle.

Where the use of a stack room is such that the stack-aisle lights do not have to be left burning for a period longer than that necessary to get the books called for, time switches may be used which will automatically shut off the lights after a predetermined period. This condition, however, is seldom found. In the Library of Congress Annex all the lights on each stack level are under the control of a master switch the momentary opening of which shuts off all the lights that are burning and yet permits their being immediately relighted.

The whole art of illumination is in a state of

flux and advances are being made rapidly. Although not yet available for stack-room use the ideal of a luminous atmosphere is conceivable. Fluorescent lighting, now rapidly developing, is a step in the right direction. Perhaps stack ceilings will soon be covered with fluorescent paint which, when activated from well-placed light sources, will uniformly illuminate all the books. It is now good practice to paint all fixed parts of the stack construction white or a good light-reflecting color which, while it may not be fluorescent, will at least conserve and reflect whatever light is available and make the stack room more cheerful.

STACK HEATING AND VENTILATING

The heating and ventilating of a stack room is also a unique problem, as in no other type of building is the head room so low and the floor expanse relatively so wide. In earlier stacks the flooring covered only the aisles; and an open gap called a "deck slit" was left between the lowest shelves and the edges of the aisle flooring. These deck slits had the effect, as far as heating and ventilating were concerned, of making the entire stack space, from bottom to top, one great room. Ventilation was secured by blowing fresh tempered air into the bottom tier, allowing it to work its way up through the deck slits in the various tiers to the top, where it was exhausted into the open air or partly recirculated. This system worked remarkably well considering its simplicity and economy. But the deck slits were objectionable to librarians and the expending use of stacks for purposes other than book storage made the heating and ventilating requirements more exacting. So the need arose for isolating the stack tiers by making the deck floors continuous under both aisles and ranges. The problem now is to take care of a series of broadly extending low areas packed with ranges filled with books.

Since each library presents its own needs and difficulties, no statement can be made as to the one best system for meeting the problem. First we should consider some of the basic principles

involved. Books require just such atmospheric conditions as are comfortable for people. Extremes of humidity and temperature should be avoided, particularly direct high temperature radiation. A temperature lower than seven degrees below freezing injures the glue in bindings. Mould may form if the humidity is excessive—over 80"—and the air motionless and over 80° Fahrenheit in temperature. On the other hand the materials of the books will become excessively tender in an atmosphere deficient in moisture. It is safe to keep the relative humidity between 30% and 70%. Another insidious danger to libraries in large centers of population is the sulphur fumes which are given off by the combustion of coal and oil, pervading the atmosphere in very minute dilution but sufficient to cause slow destruction of book materials. In the course of years, variations in temperature and humidity cause books to absorb and gradually concentrate the sulphur fumes in the form of sulphuric acid, which ultimately reduces the strength of paper and bindings. Uniform atmospheric conditions and chemical air washing retard this sulphuric acid concentration and prolong the life of the books.

Because dust is also an enemy of books, both in the soiling it causes and in the wear that comes from its removal, it is economical to avoid open windows and to depend on artificial ventilation with conditioned air. Open windows in a stack room involve a maintenance expense no large library should afford, particularly in urban and industrial locations.

A stack room should be artificially ventilated with conditioned air which has been cleaned of objectionable dust and fumes, tempered to the right humidity, heated to the comfort point in winter weather and, where funds permit, cooled to the comfort point during hot weather. Except where there is an ample supply of water available at a temperature of less than sixty degrees, the artificial cooling of air is expensive and, possibly, an inaccessible luxury. Where artificial cooling is not a part of the air-conditioning system, the persons using a book-

stack may be uncomfortable but the books themselves will not be injured except possibly by mould. In a windowless stack it is sometimes more economical to remove the heat that comes from electric lights and human occupants by circulating artificially cooled air, rather than by pumping in an excessive amount of warm outside air.

Hereafter, when we speak of ventilation we shall mean the circulation of air that has been conditioned with or without artificial cooling. Of the various methods of ventilation, *i.e.*, the circulation of conditioned air, cooled or uncooled, first in simplicity comes what is known as the "zig-zag" system. With this system the air is forced into the stack room all along the inner wall of the lowest tier and then allowed to find its way along the range aisles to the opposite wall. Here it impinges before passing up through a series of long openings or continuous slits in the first deck floor adjacent to the wall. The air flow is then reversed in direction and passes back through the range aisles and up through another series of openings along the wall, two decks above its original point of entrance. This process is continued, the air zig-zagging back and forth until it reaches the top tier where it is exhausted and partly recirculated. In this system the entire volume of air impinges against the stack walls at each turn of direction, making it possible to avoid the extreme variations of temperature that are usually encountered along outside walls. The temperature of the air can be kept up to the desired point by installing booster radiation adjacent to the openings along the exposed outside walls. This zig-zag system has the advantage of avoiding duct work within the stack room, as each stack tier itself serves as a great horizontal duct. To be effective, windows and stair doors must be kept closed; otherwise the air currents will be short-circuited and the upper tiers left unventilated.

Another way of obtaining thorough cross-ventilation involves the use of thin flat air spaces covering opposite walls of the stack room from

bottom to top—one plenum and the other exhaust. These spaces are best formed by means of insulated steel panels attached to the stack construction and spaced away from the building walls a sufficient distance, ordinarily eight or ten inches, to provide capacity for the necessary volume of air. The steel panels are equipped with controlled openings opposite the end of each range aisle in each tier; those on one side, located near the top, are for fresh-air supply and those on the opposite side, near the bottom of the tier, for exhaust. Such a system is effective, economical of space and cost and neat in appearance. The insulated steel panels can be installed at less cost than the glazed tile or face brick frequently used for stack-room facing and can be finished permanently with enamel in any way desired for light reflection and decorative purposes.

Some engineers insist on a duct system through each tier. The Library of Congress Annex has a low sub-basement plenum space from which vertical ducts carry fully conditioned air up through all twelve stack tiers. There are four rows of such ducts running lengthwise of the stack room and another row in each of the long side walls. In the rows, the ducts are spaced at intervals of about 4' 7", corresponding to the spacing of the ranges. While they utilize considerable space that would otherwise be available for books, they make possible a uniform distribution of air in all or individual portions of each tier. From the vertical ducts the air passes into hollow horizontal structural members extending across the tops of the range aisles. Through controlled openings in these it shoots out along the tops of the aisles and is finally exhausted near the floor level into other vertical ducts which are of equal number and paired with the plenum ducts. In the sub-basement space the used air is collected by trunk ducts and a large part recirculated after being remixed with conditioned fresh air.

In lieu of the built-in systems previously described, it is possible to use unit air-conditioners located at several of the windows in each stack

tier. These have the advantage of being individually controlled and of avoiding all permanent duct work. They do not, however, give a good distribution of air for a large room and the expense of the movable units is relatively heavy.

The use of low potential radiant heating and cooling is increasing in many kinds of buildings. It is particularly promising for stack rooms with steel deck floors which can so easily be formed with hollow spaces to provide the desired broadly extending radiant panels. By means of these, heat is gently radiated in winter and absorbed in summer; only as much conditioned air need be circulated in the room as is necessary to counteract vitiation. The activated panels may be concentrated in the most occupied areas, such as study and work spaces along window walls, and the rest of the stack room left to take care of itself. Thus comfort can be secured with economy. The pioneer example of this system is the stack room of Rockford College, Rockford, Illinois (1940).

THE STACK CONTRACT

The creation of an up-to-date, adequate book-stack is a responsibility to be entrusted only to expert stack engineers and manufacturers. Otherwise, opportunities will be overlooked, mistakes made, and interrelated parts will not function properly. The stack with all its equipment should be under one inclusive contract made, preferably, directly by the owners or, if that is not possible, allocated by the owners to the general contract after all terms have been fixed. It is unreasonable to expect the stack engineer's responsibility for an installation involving so many technical points, to be successfully carried by the general contractor whose experi-

ence with other libraries may be limited or nil. Furthermore, no architect or librarian can afford either for his own sake or the sake of his building to take the responsibility of giving such complete instructions as to make up for a contractor's inexperience and relieve him of proper liability.

A complete stack is a functional unit consisting of many intimately related elements. No two libraries or stack installations can be identical. Each involves special study of local needs and possibilities. First there is the problem of dimensions and locations of ranges, aisles, work and study spaces, and communications between the stack and other portions of the library building. The stack structure must be designed to facilitate the storage functions and the movement of books and people. Mechanical features such as elevators, conveyors, lifts, tubes, lighting, and air conditioning must all be cooperatively planned and designed to correlate the stack with the rest of the library building.

When this work is well done under unified responsibility the library will enjoy an efficient, economical, and enduring installation. Its creation involves planning, engineering, manufacturing, and above all else, experience, and only a few organizations have made a sufficient study and carried out a sufficient number of such contracts to be in a position to give satisfaction.⁵ It is from among them that a selection should be made—by judgment if possible, by competition if necessary. If by competition, then a specification of general requirements should be drawn up and standards of comparison established whereby designs and products can be judged and weighed against prices. The institution is fortunate which can call in an experienced stack specialist, to collaborate with the architect while the original sketch plans are being made and then follow through with them until the stack and building are completed and proven by years of use.

⁵There are four companies competent, in the authors' estimation, to be entrusted with this important portion of the library structure and equipment: Snead & Co.; Library Bureau Division of Remington Rand Inc.; Art Metal Construction Co.; General Fireproofing Co.

CHAPTER 41: BOOKSHELVING: DESIGN AND CONSTRUCTION

THE DESIGN, CONSTRUCTION, and placement of bookshelving are important matters, deserving considerable attention.¹ Care should be taken to see that they are not overlooked in the rush to complete the building plans. The planning of suitable shelving is by no means as simple as it appears, and the hasty indication and description of bookshelving in the architect's building plans and specifications often fail to secure the kind that is needed.

MAXIMUM BOOK SPACE

Beautiful woodwork is an architectural embellishment that should be utilized. But beautifully wainscoted walls, piers, or other features should not be allowed to absorb one inch of space usable for books. It cannot be too strongly emphasized that it is the duty of the architect to secure as much space as possible for bookshelving, in public rooms, in workrooms, and in storage rooms. Nearly all libraries find themselves pressed for shelf space after five or ten years.

Bookstock which is open to readers and readily available to the staff in answering requests is ten times as useful as it would be stored on another floor or in a distant stack space. Many things tend to limit the amount of accessible shelving. Wide window and door trim, carried down the full length of the opening for architectural completeness, tends to steal several inches of the bookcase itself. The architect can design a juncture of trim and bookcase so as to gain additional space for books. Wall paneling is frequently too elaborate and extensive. Often, to give an appearance of strength, the structural piers or posts are "furred out" to appear much wider than they are, reducing the length of wall shelving, with the loss of space for hundreds of books. There is an unfortunate tradition that the wall shelving should be placed be-

tween the piers and not in front of them, lest it seem to undermine the piers. Better to break through this panelling, recessing for every possible added volume. But save wall space somewhere for catalog cases, vertical files, etc.

MATERIAL

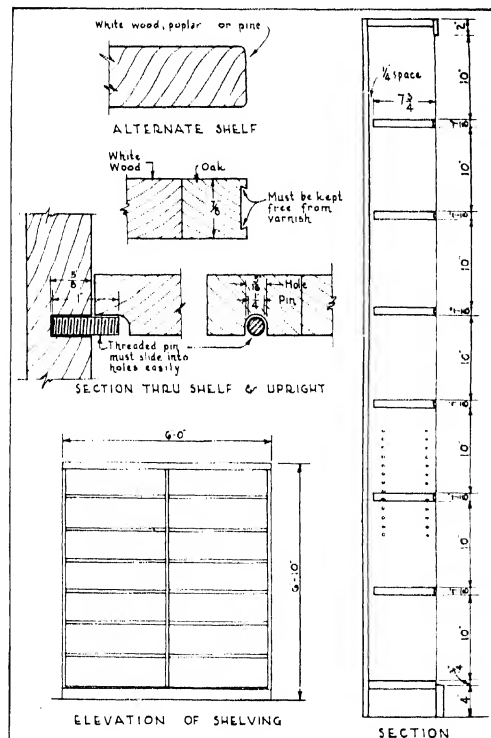
Steel is the proper material for compact stack equipment, especially where two or more levels are involved. But it is rarely used for wall shelving. Odd lengths are very expensive, and seldom does the length of a wall come out even with a multiple of the standard three-foot unit length bookcase. The Aliquippa Library has steel cases recessed in travertine walls, but this building was very costly.

Wall shelving of wood, whether recessed or built on the surface, is thought by many to be most attractive. Wood for bookcases should be carefully selected, air-dried as well as kiln-dried, and not likely to warp. For the small inexpensive building, redwood, yellow poplar, cypress, whitewood, straight-grained clear yellow or white pine are used. If after thorough drying, the stored and finished wood shows no twist; and if it is immediately stained, shellacked, or varnished so that moisture cannot penetrate, shelves are likely to remain flat except where, unfortunately, they are placed close to radiators or registers. There any wood is likely to warp unless thoroughly insulated. Oak, maple, gumwood, walnut, and other hardwoods with a more highly figured grain will naturally be used in more expensive buildings. Elaborate end paneling with highly figured butt-grain, diamond match, or other veneer, is giving way to plainer grains and joinery in line with the modern trend. Front facing wider than the partitions is vicious, as it obstructs the backs of books and damages them.

¹ See Chapter 15 for location of shelving.

Shelves are usually made of yellow poplar or other soft wood with a facing strip of hardwood to match the surrounding woodwork. Any shelf made in two or three sections glued together is more apt to hold its shape than a shelf made of one piece, and the facing strip helps prevent warping. The architect may wish to use molding on the shelf edge, while the librarian may wish to have flat grooves or recesses wide enough to take a printed label indicating the subject or authors of the books shelved. A straight flat edge, with metal label holders at-

Simple bookcase detail. The cheapest method for satisfactory bookshelving, except that the back can be omitted. $\frac{1}{4}$ in. composition, e.g., repressed Masonite, is preferable to full board backing. Shelves can be made solid without a hardwood facing strip, the front edge plain without label space. Shelves are adjusted on one-inch centers by use of threaded pins set in loose holes, the under side of shelves notched at four corners. Worked out by an A.L.A. committee on equipment. An upper finishing strip like this catches books and may damage them: better nailed above than below the top board.

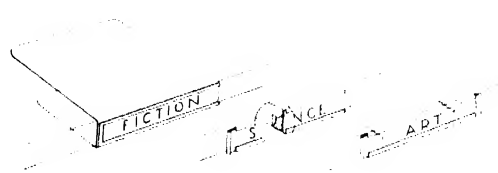


Bond Hill Branch, Cincinnati, omits window and door trim and brings cases to window jambs, utilizing entire available space for books. Note interior brick walls painted dark behind books, light above, also low window at end with built-in seat.

tached, is the most commonly used type. A spring label holder requires a slot on the under side.

BACKING

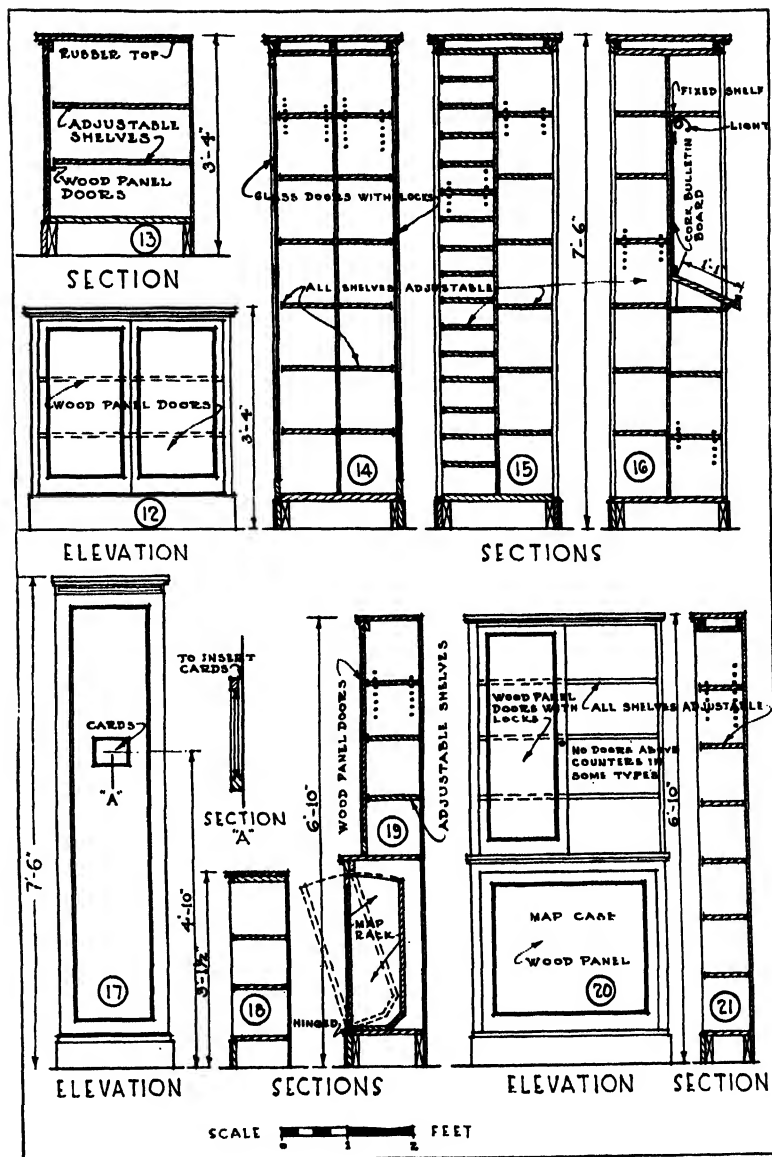
Simple bookcases have shelves butting against the plaster wall, but a backing material gives a more finished appearance, and costs little more than the white coat of plaster. It is generally



Three types of shelf-label holders.

some thin composition such as press-wood, or $\frac{1}{4}$ " repressed masonite. Three-ply (three thin layers of wood glued together) is ruined by exposure to moisture, as from a damp wall. Wall shelving does not require backing; but when the wall is left exposed there is always the problem of getting behind the books when repainting or cleaning. Often, the wall is painted to match the color of the shelving. A bigger problem is the separation of the two sides of a double-faced

At Rochester, bookcases are 6" higher than standard, which tends to encourage leaving upper shelves empty or making their use a bit awkward for the average reader. Figs. 1 and 2, plain inexpensive wall shelving showing top and bottom blocking. 3, double-faced cases, of which there are a great many flanking the reading rooms. 4 and 5, glazed cases for protected books. 6, 7 and 8, recessed shelving with concealed light for open bulletin board and display shelf, or closed exhibit case with adjustable glass shelves. Back of 8 has panelled door storage cupboards. 9, adjustable shelving for magazines laid flat. 10, with upper shelves glazed. 11, Children's room cases. Further Rochester details, 12, 13, low cupboards, glass or panel doors, for folios; linoleum top for consulting. 14, glazed double face. 15, double face; magazines one side, books the other; vertical members wider to permit installing future doors. 16, double face, with display space and light. 17, typical panelled end of double-faced floor case. 18, low shelving, high enough to stand and consult books. 19, 20, wall shelving with or without glass doors, above a projecting base containing tilting map or poster case. Both are better shelved flat. 21, wall case, 9 inches deep for fiction. All cases have repressed Masonite backs or dividing panels. The careful lining up of shelf adjustment holes at an even height above floor is required to insure continuous straight lines of shelving around the room.

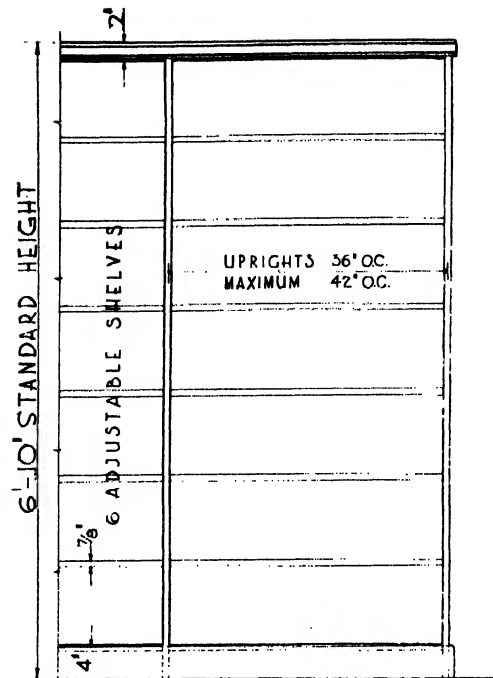
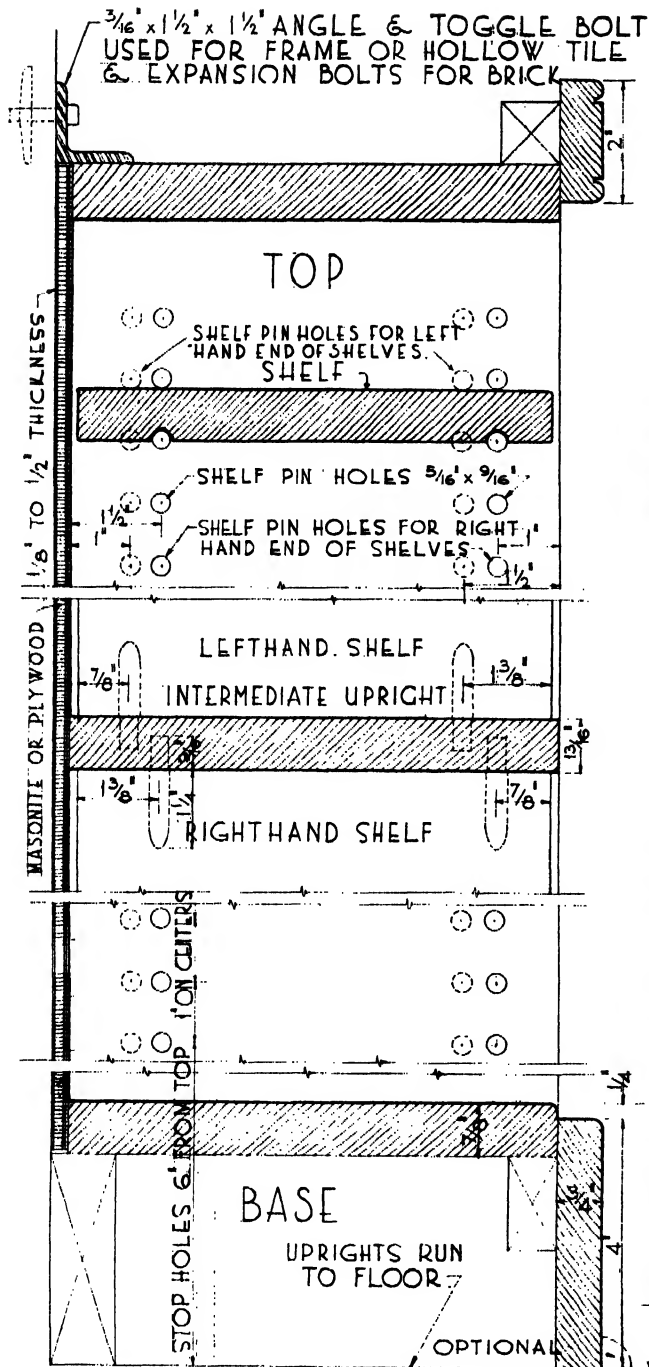


bookcase to keep books from pushing through. Nailing narrow strips to the back edge of the shelves themselves is a substitute for a continuous back, and is better than fastening strips inside the bookcase. The latter would of course prevent shifting the shelves.

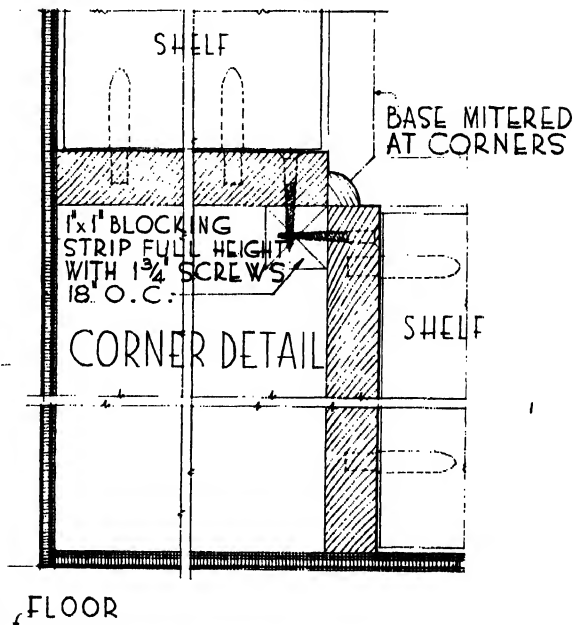
ADJUSTMENT

All shelves should be easily adjustable. The favorite method is to provide round holes at one-inch intervals, beginning six inches from the

bottom and stopping six inches from the top. These opposite pairs of holes should be carefully planned and carefully bored with a "template" or pattern for uniformity, so that when the shelving is erected and the uprights in place, a straight line will pass through the corresponding holes the entire length of the wall; otherwise, when the shelves are inserted, they will make irregular lines around the room—the usual discouraging result from employing inefficient carpenters. A stock threaded metal pin



TYPICAL ELEVATION



DETAILS OF TYPICAL WOOD WALL SHELVING.

Typical inexpensive shelving. Holes for shelf adjustment pins should be bored with a carefully measured template so that shelves of a given height will form a perfectly straight line around the room.



Browsing Room, University of Oregon. The low floor cases extending out between the windows permit a cross view but give some privacy and separation from the room at large. Flanked by small recessed wall cases; some glassed, others not. Note individual study table at right.

$\frac{1}{4}$ " x 1" is easily inserted in $\frac{3}{8}$ " deep holes $\frac{1}{16}$ " larger than the pin. The threads catch on the grain of the wood, preventing the pin from pulling out. Another type of short smooth pin, with a wide shoulder or lug, is also used.

The shelves themselves should be carefully cut not more than $\frac{1}{8}$ " short of the partition intervals; if looser, the weight of books is apt to pull out the pins. Careful workmanship here will make for a good bookcase that will never bother the librarian. Metal adjustment strips at the four corners are not so easy to handle as the old-fashioned pins and holes.

Whatever the method of adjustment, slight notches or recesses need to be made under the four corners of each shelf, to receive the supporting pins and prevent the shelf sliding forward.

One final point: the supports should be less than $1\frac{1}{2}$ inch from the front and back edges of the shelf. They are sometimes placed so close together that, due to the overbalance of weight on the front edge, the shelf tips up and spills the books.

HEIGHT

The standard height for adult bookcases is 84", with a 6" base, or 82" with a 4" base. Greater height is seriously inconvenient except for less frequently used material in basements and other store rooms. The baseboard need not be over 4" to 6" high, nor the top molding over 2" wide, unless the general trim of the room requires something more elaborate. This will leave a 76" opening, allowing six movable shelves, plus the bottom shelf, with an average clear space of 10" between shelves.

The suggestion is often made that by adding two or three inches to the total height many more oversized books can be housed. Such a compromise is only partly satisfactory; the weakness is that so much of the bookstock has to be spread over a greater space reached less conveniently, in order to accommodate a very few volumes. The method of using "dummies" in place of the few oversized books, indicating where they are located, is widely followed at present.²

Children's wall shelving is usually five feet high, but double-face cases standing out from the walls to divide space in a children's room should not be over 42" high in order to permit supervision.³ It is possible to use regular adult height wall shelving, enclosing the two upper shelves with hinged fronts for bulletin boards and using the covered space for storage. Many children's librarians dislike this, and it is not recommended where the room and its shelving are likely to be permanently used for children. Five-foot cases are more attractive and better suited to a children's room.

In the planing and finishing of the boards or shelves, they will be narrowed by $\frac{1}{4}$ " or $\frac{1}{2}$ ". In ordering lumber for bookshelving in a small library where a millwork job is to be installed by a skilled carpenter, $\frac{7}{8}$ " or $1\frac{3}{16}$ " finished thickness should be specified, otherwise it is

²We are referring to open shelving in reading rooms; the problem of stack heights for storage is discussed in Chapter 40.

³Baseboard and top molding dimensions same as for adult.

likely to be planed down to $\frac{3}{4}$ " thickness which sags with a load of books. It is even more important to insure thickness in the uprights, especially if there is no back; for the partitions may bend a bit and make the adjustable shelves too tight or too loose.

DEPTH OF SHELVING

Apportioning the amount of shelving of 8", 10", or 12" depth in a given room depends entirely on the type of books the librarians expect to place there. In general, popular circulating books—with few oversize volumes—will go on 8" shelves, with 10" shelves serving for the regular bookstock, old and new, in non-fiction departments. The ordinary reference department shelf should be 10", with 12" for folio magazines. The shelves in the art room should be 14" unless folios are marked and separately placed in deep cases; the shelves for the ordinary size art books may be 12", the size recommended also for the children's picture book corner.

SPACING OF PARTITIONS

The vertical partitions in a bookcase should invariably be 36" apart "on centers." Dividing the total space along a wall into equal parts shorter or longer than 36" is contrary to good practice. It prevents exchange of shelves from section to

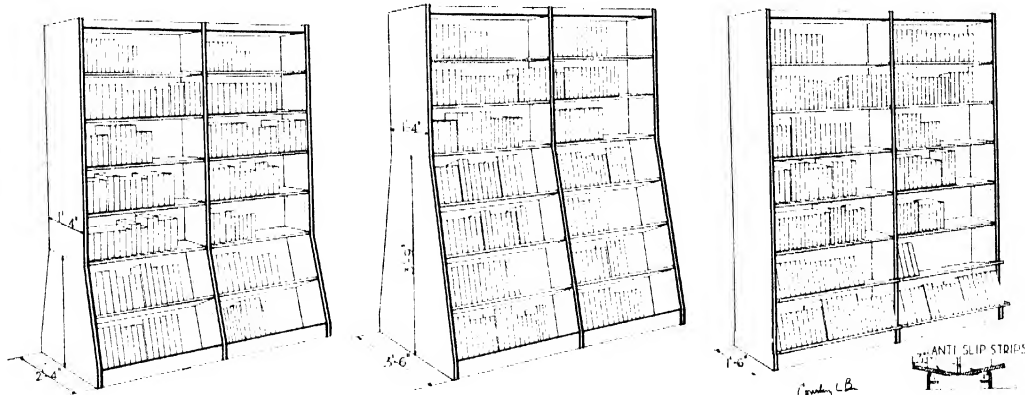


Remodelling at Central Library, Leeds, England, resulted in these modernistic alcove cases, spaced to match the windows, with tilted lower shelves and high base.

section, and complicates the frequent shifts which all bookstock undergoes. On a long wall, not easily divisible, the divisions should be uniformly 36" apart, with the odd left-over space forming the last section, even if it be only 8" or 10".

However, if a large room has windows coming down below bookcase height on one or both of its long sides, some compromise must be carefully worked out to obtain a uniform shelf length throughout the room if possible. This should be not less than 30", as shorter lengths make much trouble in shelving, shifting and

Three methods for sloping lower shelves, the second taking much more floor space but giving four sloping shelves easily read. The third uses only 18". The two lower shelves project $1\frac{1}{2}$ " and 3" respectively, forming a toe space. The latter is a standard equipment. The base construction is shown at right. Courtesy Library Bureau.



labeling. At Brooklyn, space between windows permitted 2 high sections 32" wide, and under the windows 3 low sections 32" wide, so that shelves are interchangeable throughout the room.

CAPACITIES

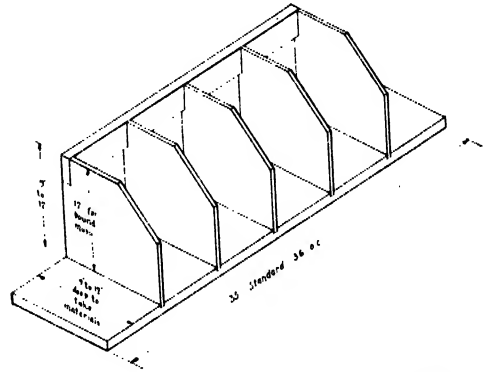
A rough estimating formula for open shelving is: 7 books to the foot of shelving. (See Ch. 15 for discussion.) For stacks consult the capacity table in Ch. 40, and the discussion therewith. The old formula of 8 books to the foot has proved impracticable; it did not provide enough space.

SLOPING SHELVES

Due to the reluctance of many readers to lean over to examine books on the lower shelves (oftentimes influenced by poor eyesight) several libraries have gone to the trouble and expense of raising the base of the bookcase and tilting the two lower shelves to make the backs of the books more legible. One of the chief objections to doing this is that the base of such a bookcase often occupies from 10% to 20% more floor space and thus narrows the aisles. The loss of book space within the case itself is also high, while the cost of construction is considerably increased. However, in circulating rooms where crowds of people look over popular books and it is important to make the books as attractive and convenient as possible, sloping shelves are well justified if sufficient space is in any way available. With the pressing necessity for making more books accessible to the public, it is not likely that sloping shelves with wide-based cases will become prevalent. On the other hand, it is significant that the equipment companies are now selling quantities of ordinary shelving with the two lower shelves brought out 2" and tilted, a sensible compromise. Sloping shelves should have pebbled or corrugated rubber strips on the surface to keep books from sliding.

THE ZONE OF CONVENIENCE

The tilting of the lower shelves raises a number of questions having to do with the general subject of reader psychology and convenience. Ethel M. Fair⁴ quotes Christopher Morley⁵ and Carolyn Wells⁶ as witnesses to the popular satisfaction in eye-height shelves, and gives figures from six libraries to prove that in open-access rooms where popular books are shelved, the two eye-height shelves are by far the most popular, even in the case of non-fiction. This study, carried further,⁷ gives sufficient evidence to warrant definite attention by librarians and architects planning open-shelf room equipment. The difficulty arises from the mere lack of space. Even where space is available, it should be remembered that a waste of wall space in one room re-



For bound music, picture books, or other tall thin books. reduces the total number of books that can eventually be placed anywhere on open shelves. Even in a bookstore, which survives by attracting customers, any waste of good shelf space is unusual.

The same argument holds to some degree where the bottom shelf is replaced by a high baseboard, making the lowest actual shelf 15" to 18" above the floor. At Concord, N. H., for example, the bottom shelves are 18" from the floor, thus giving 6 instead of 7 shelves. To shelve the quantity of books needed in the room, free-standing cases were installed, but these absorbed reader space.

⁴ Unpublished Mss.

⁵ *Saturday Review of Literature*. Jan. 1, 1938, p. 13.

⁶ *The Rest of My Life*. N. Y., 1937, p. 206.

⁷ R. R. Shaw, "The influence of sloping shelves on book circulation." *Lib. Quart.* 7:480-90, Oct. 1938.

High bottom shelves are appropriate in special small rooms, or in special portions of rooms, where one wishes to make an attractive display or give an effect of generous luxury. Here the architect has an opportunity to design a library room where books may be displayed to the best possible advantage.

LEDGES

The old-fashioned device of projecting the lower portion of the bookcase, intended originally for oversize books, is now used only under special conditions, *e.g.*, in a small generously spaced reading room for some special group. They are expensive and useless, waste floor space, and the division of shelves into two-size groups encourages splitting the non-fiction or reference books into two series, confusing both reader and page-boy.

BOOKCASE BASES

Besides the usual wood base, there are the more expensive bases made of linoleum, rubber or Formica which withstand continued mopping and are generally better and more enduring. Marble bookcase bases are seldom justified, even when marble is used in the building trim. See Ch. 37 under "Bases."

Chapter 39 on heating explains various special methods of installing heat pipes and radiators under or behind bookcases. Where the back of a bookcase is subject to heating, an air space should be provided by a false back, lined with asbestos, bright tin or galvanized sheets. The librarian should check with the architect and see that ordinary baseboards and paneling are omitted from any parts of the room where shelving will be installed. Switches, electric outlets, thermostats, and other special devices should be placed on the door trim or above the bookcases, or on the bookcase end, so as to sacrifice no wall space. The shelving should run continuously to the doorcasings.

BOOKCASE LIGHTING

Where table lights are used, and the general



Shelving at Riverside, Ill. Stock shelving can be equipped like this with special top moulding and apron. Magazine display shelves and newspaper rack with rods, set between standard uprights. Conner and O'Connor, architects. 1931. Courtesy Library Bureau.

overhead lighting is inadequate, or where there are open beamed ceilings which give little or no reflection from above, the wall cases are apt to be poorly lighted. Special bookcase lighting is quite expensive; this should be considered in determining the general type of room and table illumination. It might be well to repeat that good table lighting is achieved by general illumination; this should be designed to illumine the backs of the books in the wall cases.

If bookcase lighting is necessary, some sort of reflecting device should be used, as suggested by the small diagram here. Metal trough lighting, either continuous or from single fixtures, is expensive and should not be considered for branches or small buildings, except those whose general cubic-foot cost is far above the average. The accompanying diagram shows a reflector for bookcase lighting, with outlets on 36" centers. Reflectors made of aluminum, or coated with enamel, give greatest reflection at lowest possible cost. The small diagram shows the projecting tilted lower shelves. Bookstack lighting is discussed in Ch. 40.



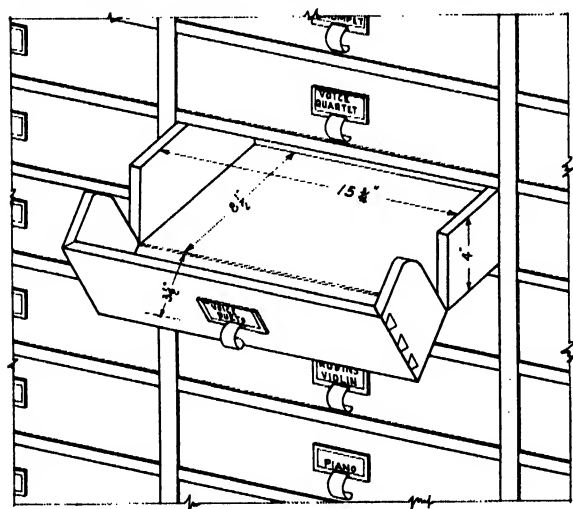
SHELVING FOR SPECIAL MATERIALS

Picture Books. These and other large thin books which will not stand up but are forever leaning and slipping, may be kept in order by

vertical partitions 6" or 8" apart, as shown in the view of Mt. Vernon children's room in Ch. 16.

If the shelves are to be of a fixed height with no likelihood of future shift, the case can be built with the partitions in place. But shifts in shelving are almost inevitable. This means adjustable shelves with thin uprights set into the shelves and braced by a strip along the back.

Music. Bound musical scores are shelved in the same way, with frequent upright divisions keeping the shelf in presentable order yet permitting quick scrutiny of the titles and call numbers. However, many scores, even when bound, are too thin to letter on the backbone, and a growing number of libraries are building up collections of unbound and sheet music. Since this material is too valuable to expose to dust and theft, and too quickly ruined by careless handling, an effective method is to provide drop-front drawers which combine the three advan-



tages of easy protection, good appearance and quick examination.

Phonograph Records. The collection and circulation of phonograph records by public libraries is, in the minds of most librarians, a proper public library function, since the library has the organization and facilities to carry on this work.

Records are often kept in vertical steel or wood files to match adjoining furniture. These may be provided with thin vertical uprights at

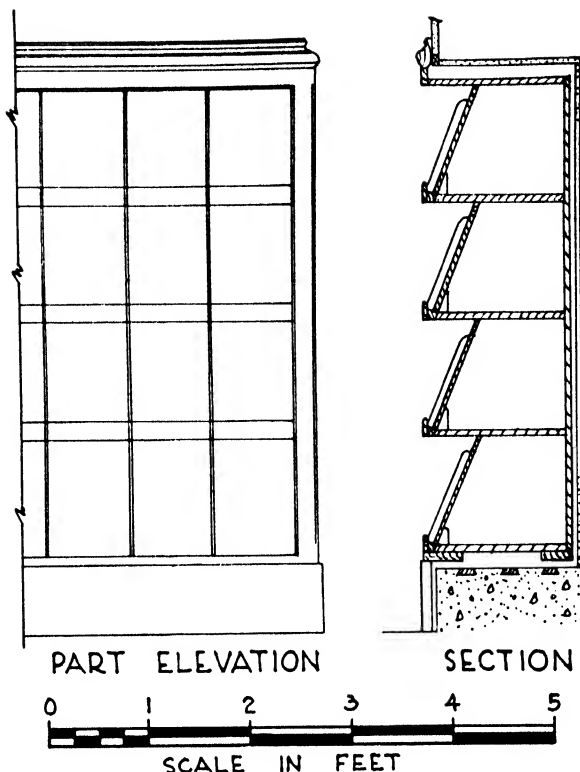
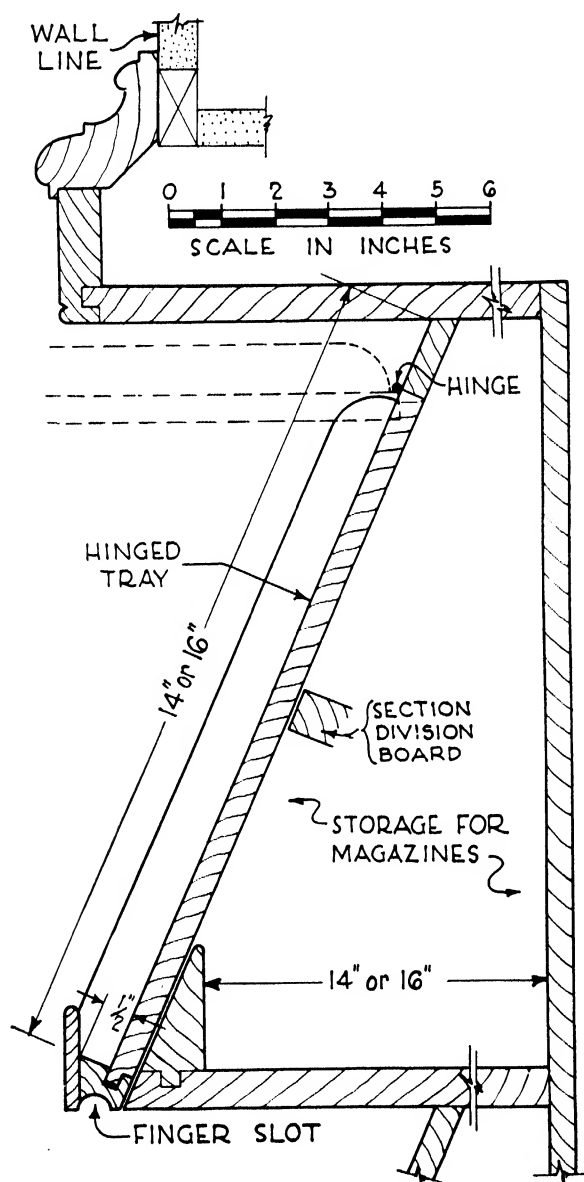
3" or 4" intervals to keep the records erect in the trays. The public may either select directly from the files or to avoid displacement and breakage will hand their requests to an assistant.

If the collection is large and not open to users, special shelf equipment must be provided.⁸ Public library collections of records are increasingly used for study and appreciation rather than amusement; the price per record is consequently increasing, calling for more careful supervision and personal servicing. Vertical filing and free handling are being superseded by closed shelving. Whether standard albums or regular phonograph record envelopes are used, the shelves should be spaced 14" apart, preferably using the standard shelving construction with verticals at 36" intervals. Thin vertical partitions should be rabbetted into the shelves 4" or 5" apart to keep the material erect and simplify handling. Loose adjustable shelves so equipped can later be removed and replaced with ordinary bookshelves, if the collection is shifted. These vertical partitions, of 1/4" stock, are often rounded and set back an inch or two from the front edge so that any labeling along the edge of the envelope or album can be more easily read by the staff in finding records. Records kept primarily as a study collection or for historical purposes should be protected from dust by doors; in the ordinary public library they will be left open.

Periodical Shelving. Bound periodicals are generally kept on ordinary bookshelves. Current periodicals, if frequently consulted, go on special display racks, as noted in Ch. 42. But there are many magazines, too specialized or too little used, that are best kept standing in pamphlet boxes or lying flat—with their backs out—on ordinary 12" shelving set 4", 6" or 8" apart.

⁸See *Lib. Jour.*, for 1937, v. 62, for four articles on the subject: p. 150-54; 279-80; 453-54; 544; also 58:529-31, 1933 and 59:266, 1934. These studies indicate a preference for wooden shelving 14" deep x 13" or 14" between shelves, to accommodate either the commonly used albums or the regular phonograph envelopes of heavy card stock. 10" and 12" records are generally kept in the envelopes, nearly 13" high.

Since some periodicals have to be shelved so that the current and recent unbound copies are together, a wider shelf may be installed, tilted at a slope of 5" or 6" to display the current issues, with the recent issues laid on a flat shelf just below. Such a bookcase would have alternate flat and sloping shelves from top to bottom, and should be 10" or 12" deep, to give sufficient diagonal height for the tall magazines. Storage drawers for loose issues, with a sloping front to display the current issue, are more expensive



Magazine racks with hinged fronts, Parkman Branch, Detroit; 72 with inside tray 14" deep, and 39 with inside tray 16" deep are recessed in the reading room walls. So satisfactory that in Mark Twain Branch, opened in 1939, they have been repeated. Current issue displayed on a sloping front; back issues stored behind.

to install. The difficulty in handling periodicals lies in the variety of sizes. To keep to one alphabet, all the shelving or drawers must be designed to take the largest magazines. Every library makes constant changes in its list of magazine subscriptions; hence frequent shifts in the placement of its magazines on the shelves.

Newspapers and Folios. Newspapers are generally kept in the reading room for several days or a week and then taken to the stacks for storing. Secondary newspapers not to be permanently kept are placed in piles on ordinary shelving. They should be laid flat, but ordinary shelving is not deep enough for this.

The best location for back files of bound and unbound newspapers may be at some distance from the current copies. The main bound file, for example, may be close to the Reference De-



Elaborate and expensive provision of aluminum shelving; residence of Paul Mellon, Pittsburgh. Dustproof glass doors. Cupboards below equipped with metal trays for valuable manuscripts. Courtesy General Fireproofing Co.

partment. Many libraries subscribe for an extra copy, kept intact for binding. Where possible, newspaper shelving—whether wood or steel—should be specially constructed. The ordinary 3' length of bookshelving wastes a foot of double-depth space, because newspaper size is generally 24" x 17". Even turning the volumes with the ends out does not permit storing two volumes between the 3' verticals. This waste of space is offset by the extra cost of special stack construction and the obstacle which such special shelving sets up in future shifts. A better solution, in steel stacks, is discussed in Ch. 40.

The main consideration in storing bound newspapers is to avoid piling volumes on top of one another. This problem is not as difficult in the adjustable stack shelving as it is with wooden bookcases built against walls. One thing is certain: newspaper volumes and large folios

should never stand erect, for unless the volumes completely fill the horizontal space, the strain on the bindings will eventually ruin them.

Folios are valuable, hence are not often kept on open shelves. Deep shelving with doors may be built against the wall, as shown in items 12 and 13 in the Rochester shelving diagram. Special folio cases are described in the next chapter.

Documents and Pamphlets. The importance of this topic is such as to warrant a special publication giving detailed instructions in the handling of document and pamphlet material. It is generally kept on regular bookshelving, except material that is thin and paper-bound, and used so constantly for public reference work that it must be kept in vertical files close to the service desk. The unit cost of accommodating pamphlets and documents in vertical files is much greater than on either wooden or steel shelving. Furthermore, as file cases are lower than eye

Glass cases, University of Oregon Rare Book Room; 9½" deep in the clear is found not enough, though supplemented by folio cases for larger volumes. 12" or 13" should be a minimum inside clear depth for glass cases for rare books, while art volumes need special cases.



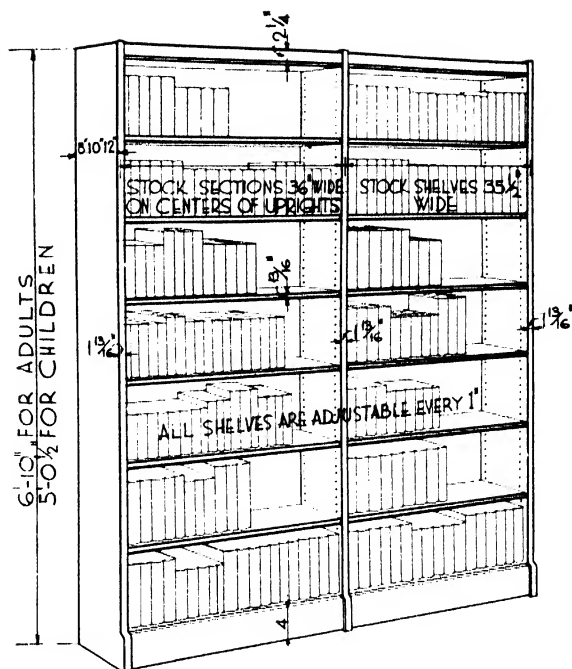
height, there is a loss of the remaining 2' of space.

J. K. Wilcox⁹ states that, within the same floor space, 5-shelf bookcases provide 59.2 running inches of shelf space, while 4-drawer legal-size vertical files provide but 30.4 inches. Correspondence-size vertical files provide 38.2 running inches as compared with 37.7 for 5-drawer legal-size files. Wilcox also points out that most collections of current pamphlet material contain such a large proportion of items less than 7½" wide and 10" high that legal-size drawers will take two rows of them. The running inches of filing space would therefore be doubled in legal-size vertical files for the material that could be placed in two rows. But even if the pamphlets were all of this smaller size, the maximum accommodation would be 56.6 in a 5-drawer vertical file. The doubling up is not fully practicable, particularly in a public library where mounted clippings and 8½" x 11" material interfere with smaller pamphlets. Comparing the cost of file cases with that of shelving, it appears that economy favors the shelving while convenience and freedom from dust favor the vertical files.

The answer to the problem of handling documents and pamphlets lies in the frequency with which the material is consulted. Vertical files are too costly for storage but are ideal for handling material that is constantly being used to answer reference questions. In fact, they are imperative for reference rooms. Where shelving is used, the pamphlet material is kept together in open-back boxes costing about 15 cents. Their use naturally wastes considerable storage space, since they are generally arranged by subject or some other classification unit, and are seldom full. The Newark Public Library, with several others, has a compromise plan calling for three or four fixed upright partitions per shelf, somewhat like those described under Music.

Folios and Oversize Books. (See Ch. 42.)

⁹Amer. Lib. Assoc. Committee on Public Documents. *Public Documents*. 1938. p. 399-400. See next chapter for vertical file details.



Standard stock shelving with holes bored at one-inch intervals for shelf adjustment. The sections come knocked down and are bolted together. For satisfactory installations a less expensive method than to buy lumber or millwork and have a carpenter install. Courtesy Library Bureau.

Maps. (See Ch. 42.)

Manuscripts. (See Ch. 42.) Accommodation for very large reference volumes, rare books, manuscripts, and maps, is seldom satisfactory on ordinary shelving even when glassed in, because of the special problems of size, growth, appropriate recognition of the collection, and safety from theft, and dust. These matters will be considered further in the following chapter on Furniture.

Film. Standard film for library use is of two widths, 16 mm. and 35 mm., the latter used mainly for newspapers and other large materials. It is generally preserved in 100' lengths in tin or cardboard containers. These containers, which are ¾" high for the 16 mm. film and 1½" for the 35 mm., may be kept in double fitting boxes of convenient size, preferably covered with binder's cloth, labeled on the front, and placed on regular shelving. There are now steel filing

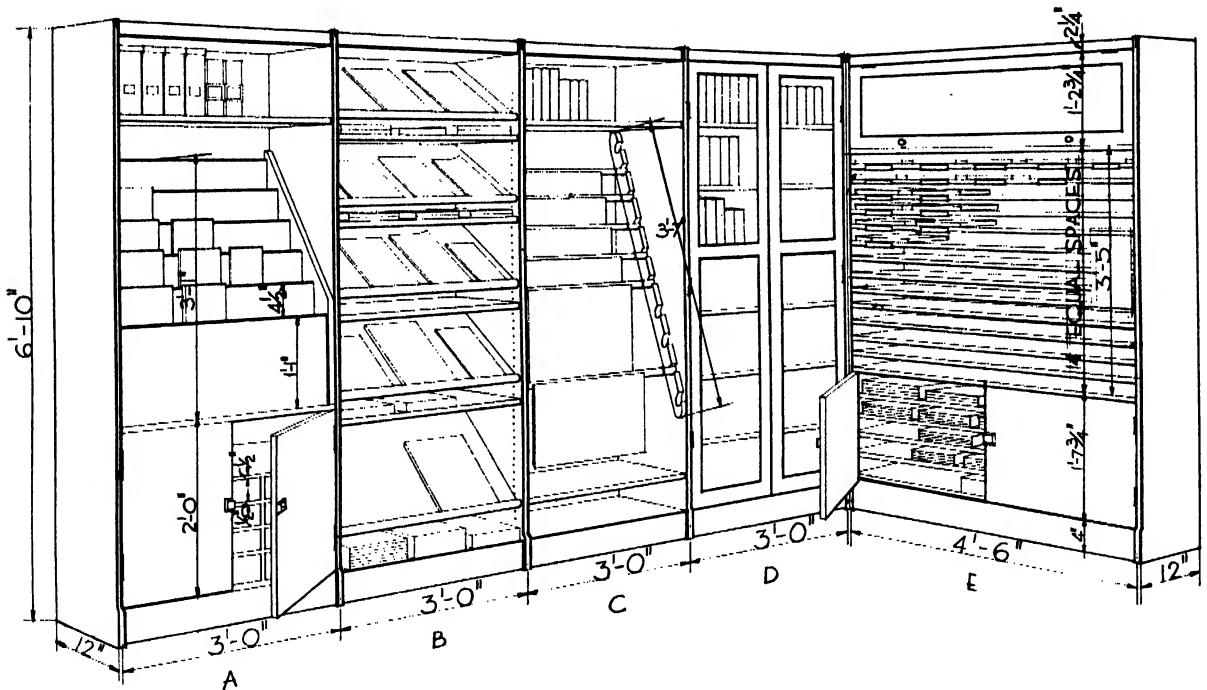
cabinets so exact and compact that they are to be preferred if the films are to be used at all frequently. The waste space above these cases could be used for other purposes, unless the projector is kept and operated on top of the cabinet. See Ch. 18 for layout of microfilming room.

CHECKLIST FOR BOOKSHELVING

As standard stock wall shelving is easily available from equipment companies and is generally used in small and medium-size central libraries and branches, the catalogs of leading equipment companies (Library Bureau, Gaylord Bros.,

Globe-Wernicke Company) should be studied and checked; space in this book is too limited to repeat their checklists. One may compare the cost, when quoted by the companies, with simpler material that can be made by a local mill-work company. But the latter will be inferior in material, workmanship, wear and appearance and in accurate adjustment of the shelving.

Note: It should be pointed out that the prices given in furniture catalogs are for single pieces. In equipping a room, the contract price may run much less than the total of separate catalog items, since the company can combine work and find various ways to economize and cut the cost.



Five standard sections of shelving with varied equipment: A. Five vertical display strips with metal holders to line up 15 to 20 magazines; cupboards below and pamphlet shelf at top. B. Sloping magazine shelves on adjustable pins, with flat shelves alternated. C. Newspaper rods on notched sloping strips. D. Glass doors over regular shelving recessed to take the door thickness. Before ordering check size of books to be housed to see if inside depth of case is sufficient. E. Extra long section with regular shelves set close together for magazines laid flat. Cork bulletin drop door over top shelf. Courtesy Library Bureau.

CHAPTER 42: LIBRARY FURNITURE: SOME PRINCIPLES AND PRACTICES

FURNITURE SHOULD BE PLANNED with the new building itself. The entire staff should take part, making constant contact with the architect through the librarian or someone delegated by the building committee of the library board. This elaborate and absorbing task should begin with the sketch-plans and last until the furniture is installed; the reward is to discover on the day the library opens that the fewest possible things having to do with furniture were overlooked!

RESPONSIBILITY FOR FURNITURE PLANNING

Some librarians believe that furniture and equipment can be studied, planned, laid out, drawn and specified more carefully if they handle this themselves, because the architect is busy with the building plans and generally leaves this to the last. Certainly the librarian and his colleagues need to participate in every step, whether the architect carries the responsibility or not. Though some bookshelving and equipment must be built into or attached to the building it is not necessarily a part of the building contract. Wall shelving generally is; but such a highly specialized item as the service desk should be purchased through a separate contract, even though it has to be built into place after delivery. It is essential to decide early:

1. Whether the architect is to include furniture in his contract and receive a fee thereon. This is usually the better course. But in the contract he should agree to assign a competent member of his staff to it, stipulating that the latter shall, from the beginning, give sufficient time to it to satisfy the librarian, confer with a library representative, and submit frequent layouts for study by the staff. He should agree to

make as many sketch plans and detailed studies of individual items and attend as many conferences as the librarian considers advisable, and it is the librarian's duty to demand this of him and closely follow the operation in all its stages.

2. Whether the librarian is to take responsibility, paying for a competent draftsman experienced in practical furniture layouts, and calling on an experienced representative of a library furniture company for help in design and specifications. Such a course may be necessary where one feels the architect is not sufficiently experienced or interested to carry through so tedious a matter with the constant study it requires.¹

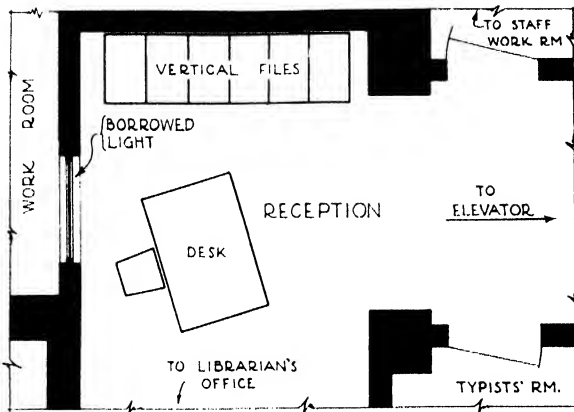
SUCCESSIVE LAYOUTS

As soon as the architect has the first sketch plan ready, the trustees should see to it that whoever is responsible for the furniture shall make a tentative layout, placing the various service desks, tracing the route of readers as they will enter and use the rooms, and roughly indicating tables and other equipment. This experimenting on paper is a test of the greatest value. The reasons:

1. Details of the plans will be changed and the furniture layouts must change with them. It should be a continuous, well-thought-out process, not a hasty scramble at the end. The architect may suddenly add a new stairway or make one six inches wider, or run piping or an air duct with openings through the wall; a work-room has to be rearranged; a table, or shelving for a few hundred books, may be lost.

2. Light outlets should be placed on the furniture layout sketch plans and studied with the furniture. If such conduits or outlets are not shown in the plans submitted for bids, or if they must be changed or the switching rearranged, it means expensive extras. Imagine staff and

¹See *Lib. Jour.* 58:290-292; Apr. 1, 1933.



Inside corridor leading to office. Borrowed light from inside window behind desk. Secretary foresaw convenience of six vertical files near desk and architect recessed the corridor wall to take 6 standard cases 27" deep, 16½" wide, 4' 3" high.

readers actually at work as they study, move about, consult files and catalogs, etc. Are the lighting outlets well placed in relation to all the furniture, adequate, well directed, well diffused to reach those who will use each piece of furniture? Are the circuits and switches arranged so that only the particular lights needed at a given time may be switched on?

3. Some pieces of equipment are built in or so closely connected with the structure that the building plans must provide for them, though they are let under the furniture contract. For example: A circulation desk with its many complicated special fittings, when it is to be built in between columns, or is to have marble or wood paneling to match surrounding design. Card cabinets when built into or against walls, between casings or posts. Bookcases built into or against walls to match loose standing bookcases, or vice versa, and all to match wall paneling.

4. It is easy to overlook very obvious items. Check against all the checklists one may gather up, beginning with library equipment catalogs. Decide on the many items which are to be built-in and will therefore become a part of the wood-work contract, but which require the same careful study in placing and dimensions.

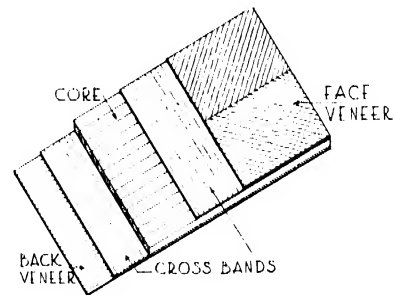
5. In the larger building the style and lines of specially designed furniture must harmonize

with the building itself. This often requires elaborate study and many consultations by architect, trustees, and librarians. In small buildings where stock furniture is used this problem takes another form—finding and assembling a series of stock furniture which in general style, material, grain, and color will form one harmonious whole. This is not made easier by the usual municipal red tape of purchasing from lowest bidders.

The architect or his representative will be working closely with the librarian. The architect will provide at the library's expense enough sets of up-to-date blue prints so the library staff may study them from day to day, marking in to scale every piece of equipment. Alterations in walls, openings, etc., can be suggested in pencil on the furniture plans to be incorporated in the next set of drawings.

CHECKLIST

Basic to the planning of furniture is a schedule listing all possible items. This checklist should first be made up by rooms and departments,



Veneered stock is used for fine furniture because it avoids the warping and cracking of natural lumber, and has a higher grain. Selected strips glued together are covered by thin sheets whose grain runs crosswise. On the outside are the back and face veneers, each about 1/20" thick, of high figure. The five layers are glued together under heavy pressure. True and even, to withstand heavy usage. All furniture surface should be protected by water and weatherproof fillings, then varnished and kept waxed to reduce scratching.

showing every piece of furniture and giving its size when necessary to distinguish between different sizes, as in the case of tables. All the similar items from the different rooms can later

be grouped on a topical schedule. However, a checklist is not enough in itself. It affects the building plan, and is affected by the latter; they should be developed simultaneously.

SPECIFICATIONS

Though complete specifications and drawings for the furniture will not be prepared until toward the end, memoranda should be kept up to date, and pencil sketches, clippings from circulars, etc., assembled in logical order and discussed promptly with the architect, so that the fullest possible information will be on hand. Preliminary specifications and schedules should be drafted as completely as possible—and submitted to all concerned at least two months before they are supposed to be released for approval and advertising, to permit careful revision without the usual scramble at the end.

Specifications should not overlook the following:^{1a}

All corners to be rounded.

Unnecessary dust-catching grooves or projections to be avoided.

Table and large desk tops to be core-built. See Veneer diagram.

File cases and card trays to be of exact inside measurements to hold standard library sizes of cards and materials, with side play.

Backs, ends, and under sides of all cases, seats, tables and other fixtures exposed to radiators or heat pipes, to be covered with sheet asbestos. Under surfaces of tables and desk tops, etc., to be finished with two or three sealing coats to prevent warping.

All movable pieces to have glass or metal glides, heavier pieces to have thick waxed linoleum bradded to base. Desk and table legs to be protected by brass shoes.

Samples of materials, including wood and hardware, showing finish, to be submitted by the

contractor for approval. This is often supplemented by placing a piece of furniture as a sample of style, construction, and quality, and requiring that bidders shall submit samples to equal it.

Delivery and installation must be covered. On a recent contract it cost nearly \$10 apiece additional to get the tables into the building because neither doors, elevators, nor windows were large enough to admit them.

It is important that the furniture be divided into groups according to its nature and not let under one contract. This is discussed in Chapter 9.

QUALITY AND STYLE

Much has been written about the important part played by good furniture in the use and enjoyment of the building; of its influence on the spirit of the institution. Harmony in design and careful detail do not escape the notice of the people who visit the library from day to day. Furniture can make or mar the appearance and distinction of any interior. Specially designed furniture is appropriate in some large buildings, but the average small building should be fitted out in the best quality and most beautifully designed stock equipment, with all pieces harmonizing. Inexpensive furniture—perhaps unfinished—may be all that can be afforded in village libraries.

The following condensation of W. L. Yust's "Ten Commandments of Library Furniture" may provide a helpful summary of principles:²

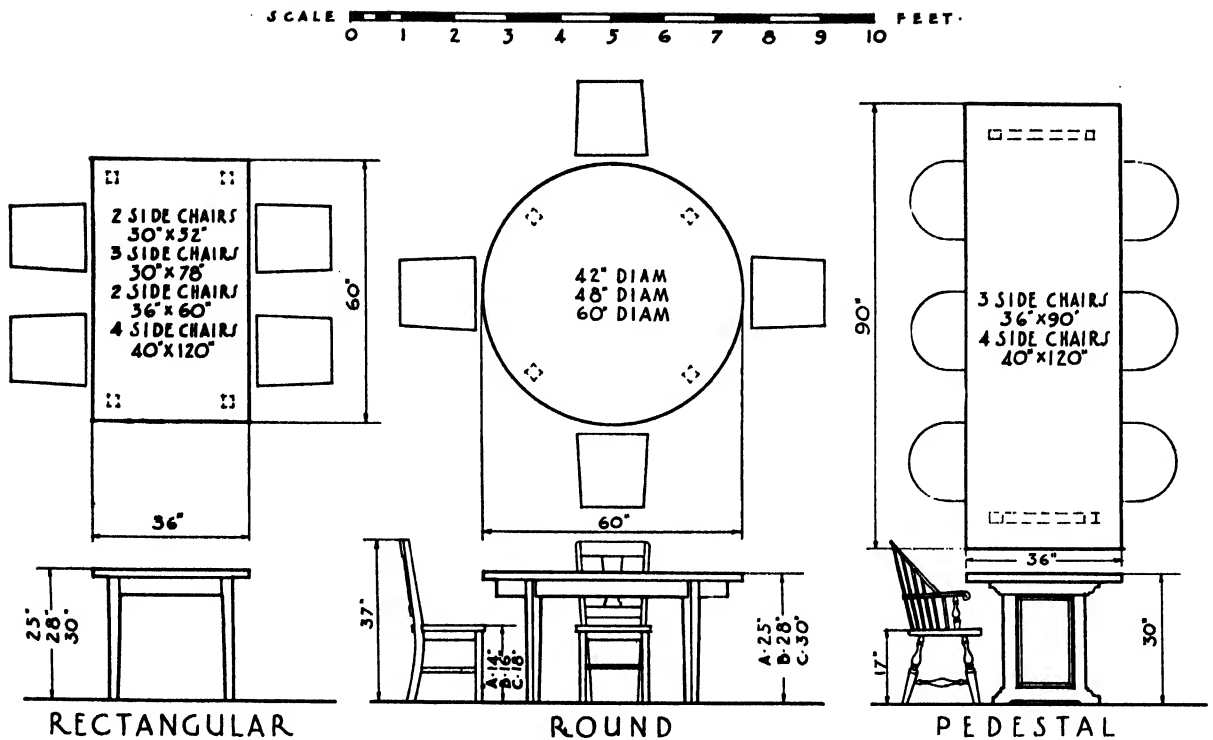
Purpose—Library equipment should aid prompt and easy accomplishment of the work, affording bodily ease and freedom from physical distractions.

Material—Wood, usually oak, is the favorite. It is less noisy than metal, more hospitable, and cheaper. Use metal for multi-floor stacks, staff desks, card cabinets in non-public rooms, and almost all vertical files.

Dimensions—Table and chair standard sizes are given elsewhere. Exact dimensions are essential for drawers and trays holding catalog cards, record files and articles of uniform size. The adoption and duplication of a well-established unit encourages systematic and uniform growth and expansion.

^{1a}L. A. Eastman, *Furniture, Fixtures and Equipment*. Chicago, A.L.A., 1927, p. 3. Also, valuable detailed article by F. K. Walter, "Library furniture specifications," *Lih. Jour.*, 50:163-65; Feb. 15, 1925.

²*Libraries*. 31:267-69, June, 1926.



Standard spacing for reading room tables and chairs (see also series of diagrams in Ch. 14).
 Courtesy "Architectural Forum."

Design—Simple, comfortable, dignified and beautiful, avoiding extremes, free from elaborate carving, grooves where dust may lodge, sharp edges and corners that injure or chip easily.

Construction—Of approved style according to the methods developed by library experience, giving strength and durability, providing in some cases for expansion in summer damp and contraction in dry heat of winter, adjustability in others, thus preventing loosening of joints, warping, cracking and splitting.

Finish—Of varnish, wax, fume, paint or enamel. The first two are most used and the last two least used except on metal. The expense of a hard finish, the ease with which it is scratched and marred and the high cost of restoring it are bringing wax and oil into favor. None is proof against rough usage.

Color—For woodwork, furniture, floor, walls and ceilings. A pleasing combination frequently seen is buff walls, cream ceiling, brown floor, light oak woodwork and furniture. Avoid dark colors. Lighter shades diffuse light, are more cheerful and easier to keep clean.

Price—It is better to get only half enough equipment at first and have it right than to compromise on a cheaper but inferior article. "The best is eventually cheapest."

Manufacturer—If the maker knows his business and is reliable, he will properly attend to most of the principles mentioned. The inexperienced cabinet-maker, though thought capable, is liable to error.

SHELVING

Bookshelving is discussed in the preceding chapter.

READING TABLES

A study of various books, articles,³ and catalogs⁴ on furniture shows the following commonly used sizes, with numerous variations. Variations, either in tables or other equipment,

³ Bishop, Bostwick, Eastman, Gerould, Hadley, Kennedy, Koch, Marvin, Soule, Walter.

⁴ Library Bureau, Gaylord, Globe Wernicke. *Enoch Pratt Library Furniture Book*. We refer to Library Bureau Division of Remington Rand, Inc., by its familiar short name.

are not recommended because they complicate shifts, additions and replacements. These are the standard sizes:

HEIGHTS

Adult, 30". Children, 25", 28".

TOP DIMENSIONS

30" x 52" = 4 readers; for children.
 36" x 60" = 4 readers; generous.
 30" x 72" } A poor compromise where aisles are too
 36" x 72" } narrow for 78" length. Generous for
 4. Crowded for 6 readers.
 30" x 78" = 6 readers. } too short for adults and de-
 36" x 78" = 6 readers. } creasingly used for children.
 36" x 90" = 6 readers; generous.
 36" x 120" = 8 readers.
 40" x 120" = 8 readers; generous.

CIRCULAR (GENERALLY FOR CHILDREN)

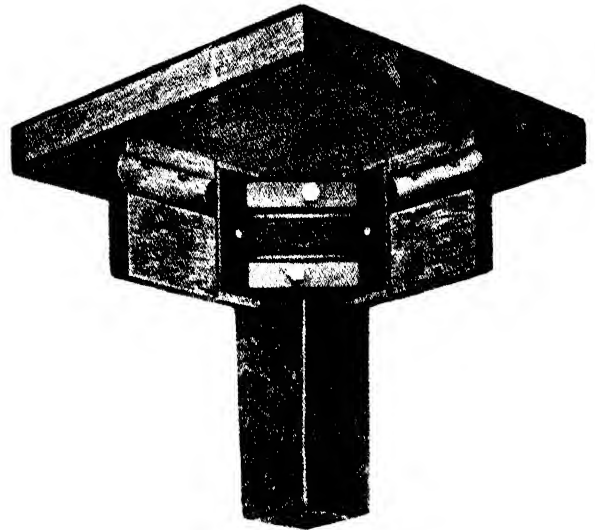
42" diameter = 4 readers.
 48" diameter = 5 readers.
 60" diameter = 6 readers.

The spacing of regular reading-room⁵ tables is shown at the close of Ch. 14, and in the diagram above. Reference readers, with materials spread out, need tables 36" wide. For elbow room 30" width is needed; i.e., for two or three readers on a side, tables 52" or 78" long, by 30" wide, are permissible for a magazine reading room, but tables 60" or 90" by 36" are needed in a reference room where readers must lay out books and papers. In a college library, 40" is a desirable width for 10 ft. tables, or 44" for 12 ft. length. The 30" wide table is inadequate for special reference rooms, such as art departments where the greater amount of material laid out calls for 36" x 60" and 36" x 90" unless space and money permit special 40" x 90" tables. Long tables are more economical of space but less satisfactory to the reader due to inconvenience in getting to and from his seat. Individual tables are most satisfactory for the student, but consume so much space that they can be used only at certain points, such as in adult reference

rooms. The single width table, 24" x 60", with two students on one side—all the students facing one way—is found in high school libraries. At a busy branch used by high school students it simplifies the discipline problem, but gives the aspect of a study hall or class room.

DESIGN

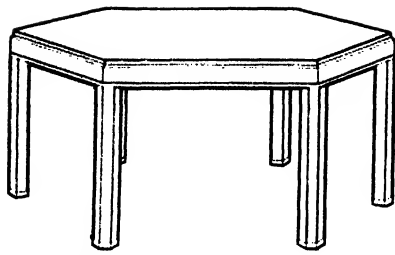
Tables fall into two general types, leg and pedestal. The latter are more expensive and impressive, permitting a variety of design, and belong to the larger and more handsomely furnished building. Probably nine tenths of all library tables used are of the leg type. Structurally all tables, especially those over 6' long, should be braced lengthwise, as well as have their legs so solidly fastened to the top and apron that long use will not loosen them. A loosely constructed table annoys all who use it, especially in writing. The usual factory-made tables were formerly provided with steel plates attached firmly to the aprons; a lag bolt drew the legs tight, and could



be retightened from time to time. The recent development in table construction is the use of machine screws engaging metal bushings which are sunk in the wood and fastened.

The four legs are practically free standing except for their fastening at the top. Being subject to constant kicks and knocks by readers, in addi-

⁵The information in this chapter is not prepared for school libraries; see L. F. Fargo, *The Library in the School*, 3d. ed. 552 p. 1939. Chic. A.L.A. \$3.00, p. 262-318 on school library housing and equipment.

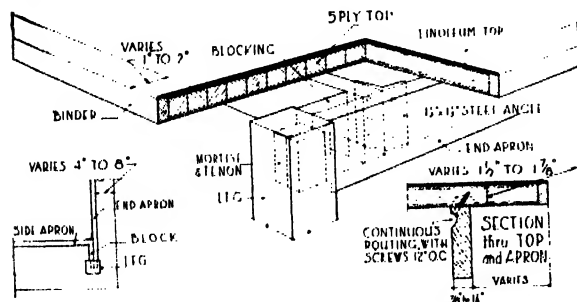


Hexagonal reading tables for adults' and children's rooms, in the new and simple style. Courtesy Library Bureau.

tion to the pushing and leaning against their tops, tables should be frequently checked as to their solidity. To reinforce them, stretchers (cross connecting pieces nearer the floor) are sometimes used. These may become unsightly foot rests and are not often used except in special rooms for a select clientele. A pedestal end gives even greater solidity to a table than a stretcher. Where a long brace or stretcher is desired, it can be mortised under the top between the end aprons, or in the case of pedestal tables it may be curved downward at the ends to make a shoulder 10 or 12 inches deep. In either case it gives great rigidity if properly secured.

Table-tops should be at least $1\frac{1}{2}$ " thick and built of several laminated layers. Veneered tops permit beautiful grained effects, and most good reading tables have figured veneer tops. The edge itself, if flat, may be a thin strip of figured

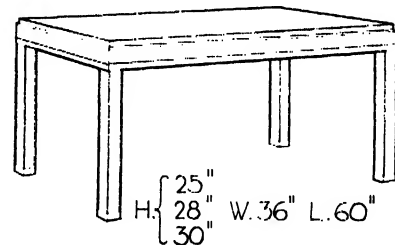
Table top overhanging apron mortised into legs and reinforced by steel angle. Shows the built-up core with two layers of thin cross-grained stock and linoleum or veneered top surface. Solid binding strip around the edge. Courtesy Library Bureau.



grain to cover the edge of the table, carefully mitered and glued to show no dividing line between it and the top. More expensively, it may be a solid piece 1" to 3" wide, mitered to form a solid frame around the table-top.

Heavy linoleum tops with wood bindings, however, are more sensible in these days of notebooks with projecting rings and staples which are so apt to scar table-tops. Linoleum avoids glare, if not polished too often. Metal or wood binding is used for linoleum, Formica, Micarta and other composition tops. Linoleum and wood tops in one large library have been so badly cut by jackknives that wood-imbedded formica tops are being used.

Round tables, frequently used in children's rooms, break the monotony of the regular rows of rectangular tables and lend an air of informality. They also imply an intimacy among readers which the usual adult reader does not seek.



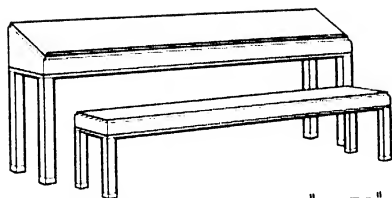
Simplicity in table design. Standard widths and lengths. Courtesy Library Bureau.

SPECIAL TABLES

We must refer to the dealers' catalogs and the *Enoch Pratt Library Furniture Book* for working details of such special items as sloping-top tables and benches for small children to use in looking at picture books, sloping-top tables for laying out folios and copying material in the Art Department, and index-consulting shelves built along one edge of the reading table nearest the service desk, to facilitate the use of magazine indexes by both library staff and readers.

WORK TABLES

The design and material of work tables in public rooms should generally match that of the



STAND H 26" AT FRONT W. 15" L. 78"
BENCH H 15" W. 13" L. 69"

*Reading and picture book benches for small children.
Courtesy Library Bureau.*

readers' tables. In workrooms, two or three short tables that can be put together or separated in accordance with future needs are better than one long table. Stout tables made up at the mill with $1\frac{1}{2}$ " tops of a size to fit the space, covered with linoleum, and equipped with the desired drawers may be preferable to stock designs that have little relation to the space available. The merits of work benches 20" deep, built against the walls of small workrooms, should also be considered. An intelligent "mill work job," topped with linoleum and having 10" shelves 12" and 22" above it to hold material, may be quite useful.

Typewriting tables and stands should be solid above everything else. Swinging bracket stands are not satisfactory and tripod stands tip over and damage the machines. The work surface should be 26" or 27" high, never 30". There should be at least 15", or better 24" space on both sides of the typewriter to enable one to spread out his work. The same amount of space may also be left open for one of the highly satisfactory steel typing stands with folding leaves and a device to shift its weight from the casters to the solid legs and thereby prevent the vibration of the ordinary movable table. These wheel stands are useful in limited work spaces.

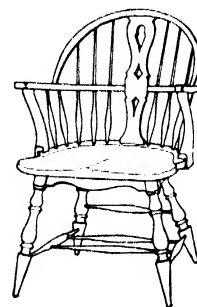
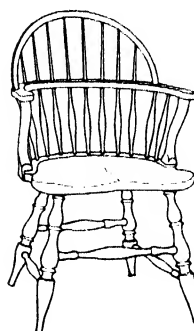
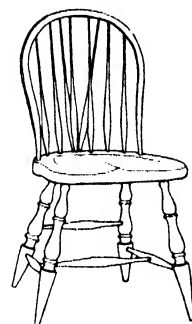
CHAIRS

The subject of library chairs bristles with con-

troversy.⁶ One enthusiastic manufacturer believes that each library should design its chairs to be "indigenous to the locality." But it is not clear just how chairs for Oneonta, N. Y., would differ from those in Fairfield, Iowa, or any other city. It would seem to be enough to have designs which harmonize with the architect's plan of the building and its interior. But even here there is plenty of room for choice, and the determining factors must be those of strength and economy. Specially designed chairs may be as strong as stock chairs, but care must be taken to subject them to the same tests that other chairs must meet. Consider this picture of "Mr. Tipper." After readers have tilted their weights on two legs of this chair for ten years, it will surely have collapsed unless intelligently wedged, braced and held together. (See illustration, next page.)

We have already considered veneered or built-up stock for certain furniture. Solid wood, rather than veneer, is used in chairs, but the grain is specially selected for figure. Occasionally a veneered splat or back panel is used. The three following illustrations show different methods of constructing Windsor chairs. The third type, with arms and a reinforced box frame, is the strongest. The arms of library chairs are short-

Windsor chairs are always popular, especially with arms. These are cut back to avoid marring tables. The lower right-hand chair is greatly strengthened by the "box" seat or cross frame. Splat back and saddle seat like this are most comfortable. Courtesy Library Bureau.



⁶T. W. Koch, "Library chairs and reading tables," *Lib. Jour.* 58:293-300, Apr. 1, 1933, also American Library Institute, *Symposium on library equipment*, 6 p. reprinted from *Charles Deering Library Bulletin*, 1932, Northwestern Univ. Evanston, Ill.



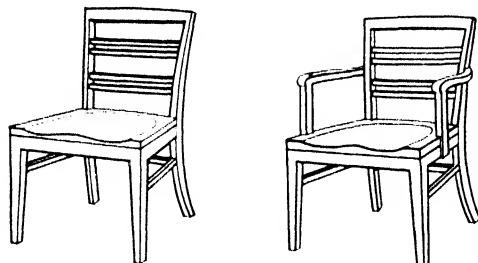
"Mr. Tipper." (Engraving, courtesy Library Bureau.)

ened to end 3" or 4" back from the edge of the seat, to avoid scarring the table edges. The Windsor is doubtless the most popular chair with readers, for it permits twisting about and gives comfortable support for the back and elbows. It is more expensive than the plain box-frame library chair and requires more clearance room for readers to get in and out. Furthermore, in reference rooms the arms are a bother to students who come to copy and to write. Ordinary Windsor chairs will not stand up under library conditions.

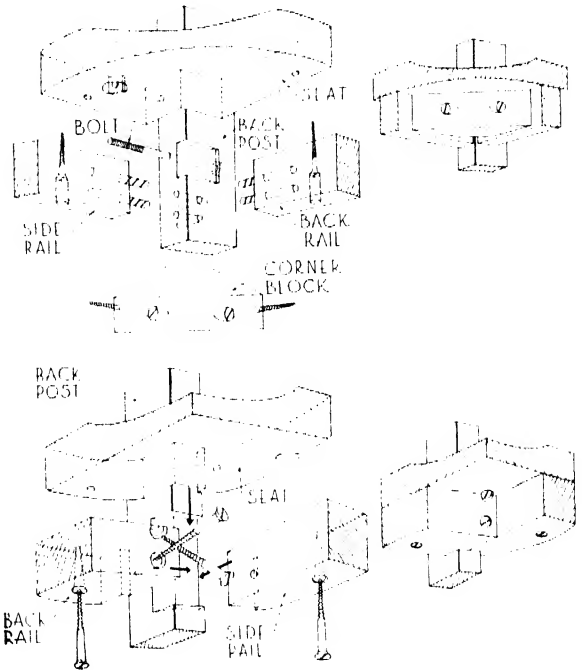
The box frames under chair seats are an important investment. The accompanying diagram shows how the joints and bracings are put together for strength.

While many cheap chairs are sold with box frames, only a few reliable concerns have de-

Plain lines and attention to practical needs characterize modern furniture. Note absence of front rung to discourage "heel hanging" and tipping backward.



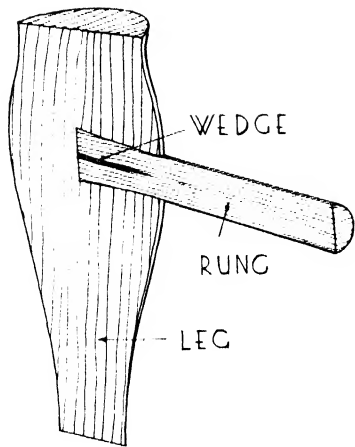
veloped chairs to withstand library use. These have round-edged seats built up of narrow strips tongued and grooved together, joints doweled and braced, all gluing well done and not likely to dry out, legs spread to give the greatest floor support and proper placing of the cross stretchers to prevent readers from tilting their chairs backward or hanging their heels on the stretchers. In regular "straight" library chairs some smoothness and distinction in design are possible, and several types are on the market. These



Careful construction makes some library furniture endure. Metal bushings driven into the wood permit firm attachment by bolts and screws, so that legs and seats will remain rigid under long use. Few persons glancing at these chairs realize the important hidden workmanship. Courtesy Library Bureau.

plain chairs, without arms and with saddle seats, are most practical. The back legs should be steam-bent, as otherwise the curve at the seat has to cut across the grain; cheap chairs often split at this point. Finally, comfort depends on the slope of the seat and back. Samples should be tried out before ordering in quantity.

It is in these details that poor, mediocre and short-lived chairs differ from those perfected by



HALF SECTION CHAIR LEG
— SHOWING SPLINE JOINT —

Half section of chair leg showing spline point as it should be made. The wedge is started into the cross stretcher; when driven into place it cannot work loose. Courtesy Library Bureau.

years of competition among three or four manufacturers who know and meet the exacting demands of librarians and readers.

STAFF WORK CHAIRS

Revolving desk chairs in public rooms should match the readers' chairs. Higher swivel stools, at 39" high service desks, should be provided with backs (at least low backs, if not the adjustable posture type), except in crowded quarters. In large public service rooms the seats should be upholstered in leather for comfort and appearance. Circular rails around the legs of high chairs and stools give a welcome footrest and heel purchase.

In workrooms where appearance is not so vital, efficient, comfortable posture chairs should be provided for all typists, especially in the catalog room. Low, round 14" stools on large ball-bearing casters are very convenient for those assigned to work at catalog cases.

DESKS

The usual type of office desk should be bought only for the librarian's or general office, and for catalogers and typists. Other desks of the same

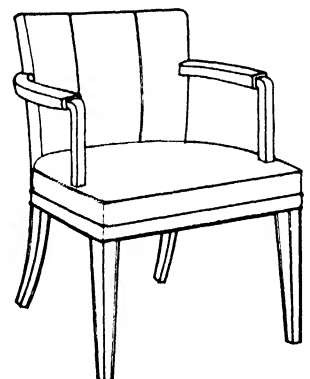
size and height, specially equipped, should be bought from library furniture companies for use in public departments where the persons on duty give book or information service to readers. Why? Because every inch of space counts for convenient daily work. Even a single pedestal desk like the so-called "time saver" may have the drawers specially equipped, on order, for such express purposes as: Information, Readers' Adviser, Departmental Reference, or Charging. Each of these duties has its special requirements. Many librarians like special card-index files in their desks, or the two lower drawers made as one deep one for a vertical file. All these details are a matter of local study.

For measured perspective drawings and diagrams of over 200 different special pieces designed for various library purposes, we suggest consulting a copy of the *Enoch Pratt Library Furniture Drawing Book*, 1931, now out of print but available at several large libraries and rentable from the Enoch Pratt Library, Baltimore.

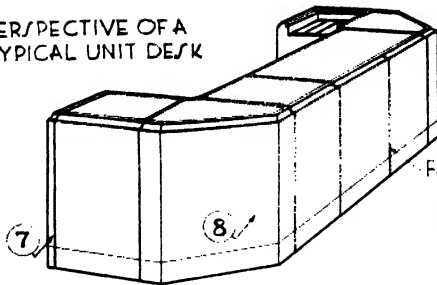
CIRCULATION DESK

This term is usually applied to the tri-purpose counter where readers register for borrowers' cards, and charge and return their books. It is often called the Charging Desk, but it is equally well known as the Delivery Desk, the Loan Desk, or the Service Desk. The same type of desk, similarly equipped, is used in the Children's Rooms of small or medium-size libraries.

Readers like leather upholstered chairs. But not many would stand up against heavy library use as successfully as this. Courtesy Library Bureau.

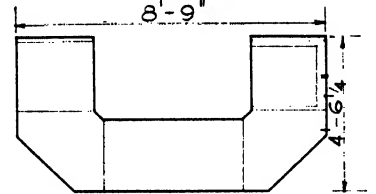
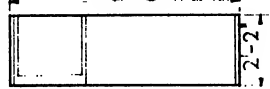


PERSPECTIVE OF A
TYPICAL UNIT DESK

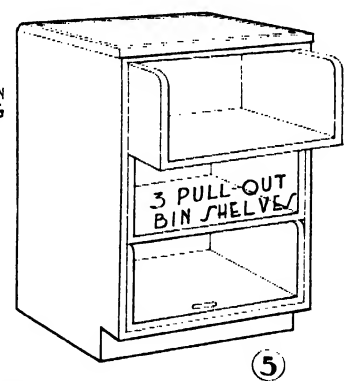
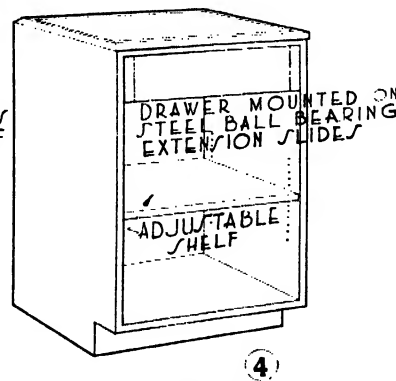
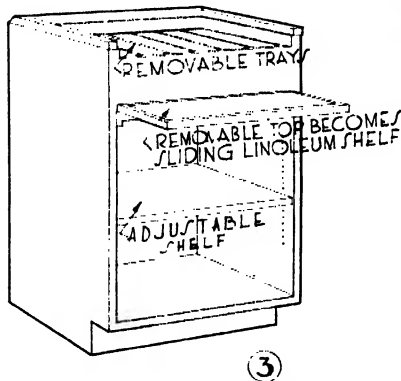
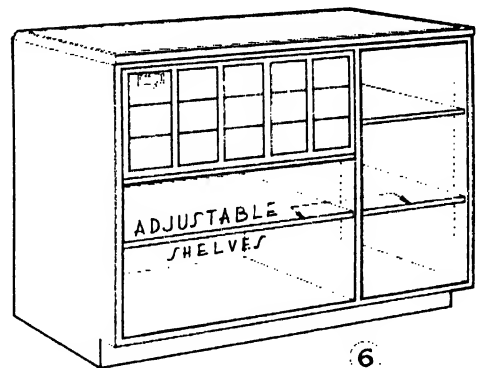
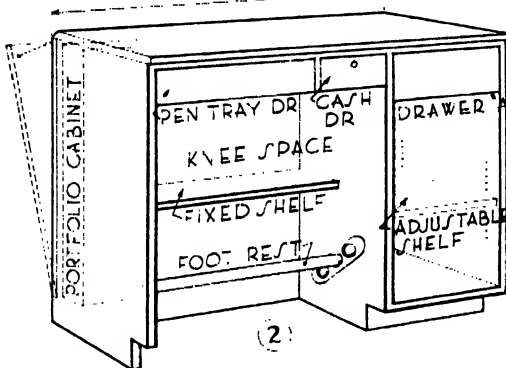
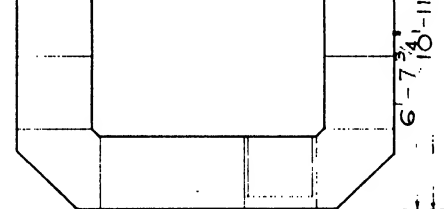
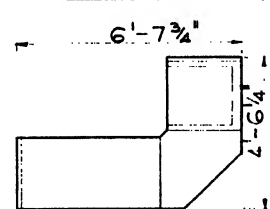
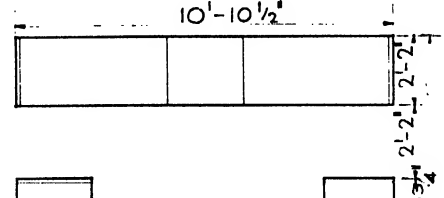
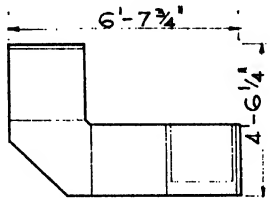
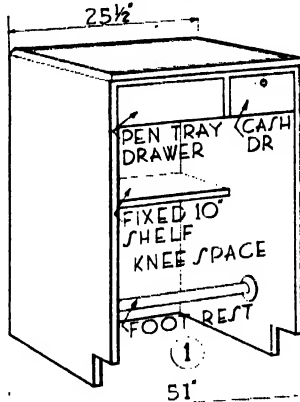


CHARGING DESKS TO BE MADE UP OF 25½"
OR 51" WIDE UNITS, END UNITS, AND CORNER
UNITS AS REQUIRED.

FALSE SECTION LINE



ALL UNITS 26" DEEP & 39" HIGH



Series of standard sections for circulation desk, showing possible combinations and interior details. The top compartment of (3) contains 6 trays for book cards 3" wide or 8 trays for cards 2" wide. The drawer of (4) can be fitted with any one of the following: (a) 5 trays for book cards 3" wide; (b) 3 trays for application cards 5" wide; (c) trays for deposit of book cards through slots cut in desk top. Courtesy Library Bureau.

Stock Desks from the equipment companies are usually bought for both adult and juvenile departments. They are arranged for the three circulation and registration functions according to local needs, as discussed in Ch. 13. Larger libraries lending over 100,000 volumes use larger desks more elaborately and specially equipped but having the same simplicity of outline. They should be rectangular, with the outside corners cut off or rounded, the inside corners square.

The desk should be located to meet the following tests: (1) Good door control, (2) Avoidance of traffic and noise where it may disturb readers, (3) Speed and ease in shelving returned books, (4) Removal of as much of the routine as possible from public view, (5) Subordination of book lending processes to book service,⁷ and (6) Avoidance of direct glare from the entrance. The receiving desk, if the slipping is not to be done at it, should be near a circulation workroom. Receiving and registration are well combined, since borrowers' files and files of book cards have to be consulted for renewals, overdues, etc. Larger libraries will consider the separation of the three functions at three desks, but this requires more assistants!

In large libraries of distinctive design the desk may be built-in, of the material and design of the surrounding paneling or trim. This is seldom wise, however. The desks should be simple, avoiding moldings, and the like, and should provide for future enlargement and change. No white or other light paint should be used on desk exteriors. Hardwood should be used. A separate piece of furniture permits future changes which are sure to come, and is not more expensive. The decision as to a separate or a built-in desk will be determined largely by the location of posts and walls and the amount of clearance space for readers and staff.

The modern desk should be streamlined, free from sharp corners, ledges, or overhangs. Toe space 3" high and 4" deep all around the inside

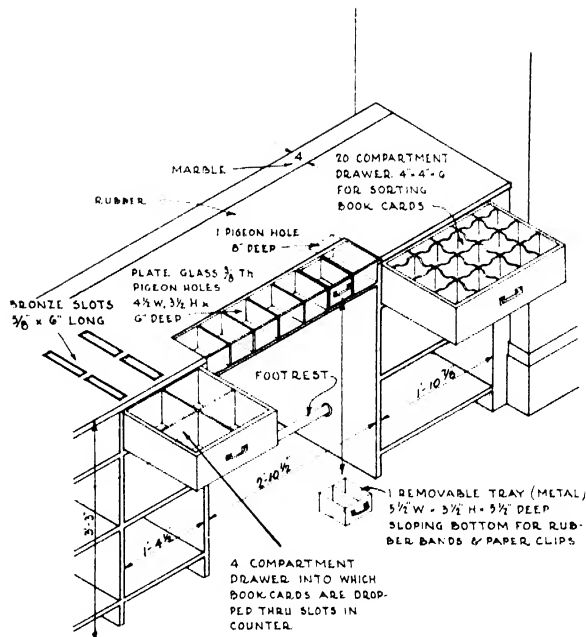
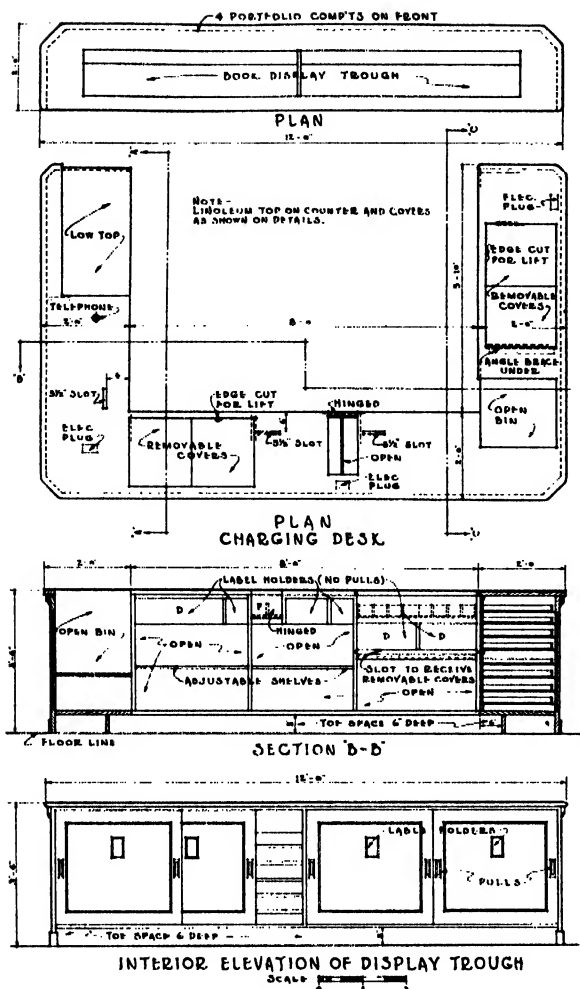


Plate glass insert in circulation desk with 6 pigeon holes for supplies constantly used. Four-compartment drawer receives charged book cards dropped through slots. Right-hand drawer, 20 compartments for resorting cards, while assistants await next borrowers. See details in "A.L.A. Bull.," June, 1934.

is a comfort. Sliding doors (preferable to hinged doors) hide supplies and unsightly objects, but should not be used to cover the day's work, or any books. Cupboards should be located after all working spaces and drawers have been placed. All movable equipment, trucks, posture chairs, stools, typewriter tables (with at least 15" to 18" work space on both sides of the machine), and movable discharging or slipping stands, should move easily and quietly. Drawers should slide on suspension roller bearings.

The standard adult desk is 39" high. Some urge that for informality the regular table heights of 30" should be used; but as assistants must be constantly rising and moving about, fatigue and delay result. Children's charging desks are usually 32½" to 34" high; the trend is toward 34". The standard width for the top of service desks is 26". The working-top surface should be finished with durable, waterproof material such as linoleum, rubber tile, or some

⁷From Mss. by Theodora R. Brewitt, 1939. Some of these purposes must be worked out in the light of discussion in Chs. 13, Circulation Department, and 18, Workrooms.



West Toledo Branch desk. Details opposite.

other composition like Micarta or Formica. The authors recommend linoleum. A hardwood top will not take the hard usage received. Edges must be bound by metal, wood, or marble strips. Tops should be cleaned and waxed every week unless this is found to make them too slippery and glossy.

Interior equipment is carefully worked out in the stock desks which may be studied in furniture catalogs. A series of stock sections is shown here in combination. Larger desks require that each portion be studied in the light of the work to be done, aided by the following suggestions and accompanying diagrams and illustrations.

There should be electric outlets under the

desk to take care of lamps, fans, inside and outside telephones, charging machines or other equipment that may be installed either now or later. Lamps standing on, or close to, the desk are hard on the eyes. Lighting should come from a diffusing fixture six to eight feet above the eyes, preferably suspended from the ceiling and in line with the inside edge of the desk so as to reflect the glare away from the workers. Outlets should be close to those who will use them.

Each worker's regular position should have knee space 24" wide cut out under the top of the desk. This space should be enlarged to a width of 30", if revolving stools are used. Knee openings should be equipped with a footrest. Preferable to the usual sloping shelf with rubber mat, is a metal pipe, adjustable in height and depth in a series of end sockets to accommodate persons of various heights. Along the working edge of the counter, just in front of each worker, cut-outs should be made 3" high and 5" deep, with compartments for printed forms constantly used in circulation and registration work. These are visible through a plate-glass section set flush with the counter.

CHARGING SPACE

Will one, two, or three assistants be needed to charge books during busy hours? A minimum of 30" for each assistant should be provided at the point where the public and staff can most conveniently meet, as discussed in Chapter 13. There are desks with cut-out space and sorting trays to allow the assistant to drop cards into compartments and sub-arrange them in her spare time. A better provision is the more common one of 4 or 6 diagonal slots, slanting lengthwise at the assistants' left, for dropping the book cards into the compartments of a drawer underneath. A corresponding drawer at the right hand can have 20 4"-square compartments for further filing of the cards from the left drawer, as shown in the preceding diagram. These drawers should be installed on suspended rollers, to open and close at a touch. The work is thus out of sight of the public at the desk.

Service desk at West Toledo Branch, Toledo, Ohio. See p. 263 for floor plan of the building. An example of the specially designed desk for a large, busy library or branch; the question always arises: Does it pay to depart from stock equipment, e.g., such as that shown on p. 452 and have special shapes, trim, compartments, etc.? In any case a service desk should not be included in the general building contract.

1. Workable dimensions and ideas are found in these carefully thought out details.

2. "A-A"—Registration and records therefor. Also at left, cross section of charging tray bin with drawer under. "3"—Method of attaching work shelf to inner face of desk for additional space.

3. "C-C"—Interior of section for charging trays. At right, cross section of removable shelving below, showing knee and toe space.

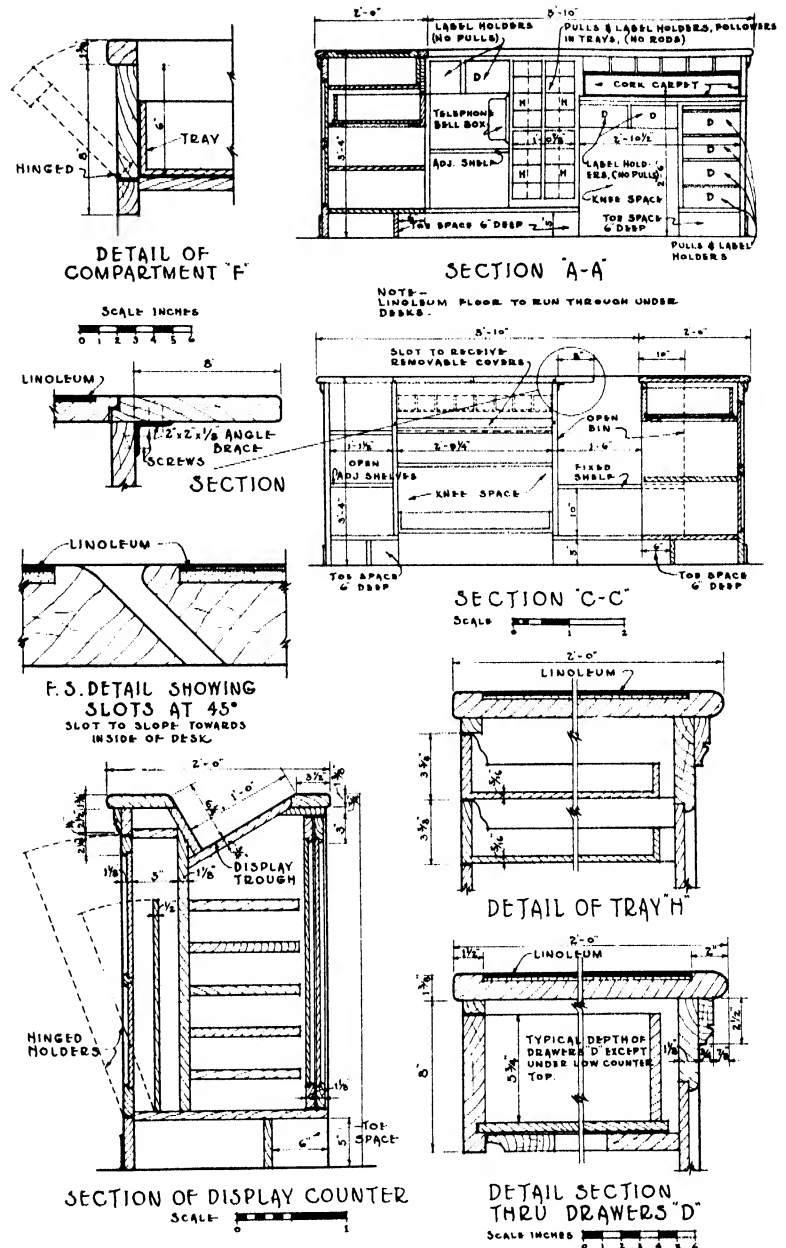
Slot Detail—For dropping charged cards; corners rounded. Linoleum stops short of opening.

4. "D"—Typical section through counter with drawer under top.

5. "F"—Drop front for charging tray compartment; full trays easily removed.

6. "H"—Cross section of register files, showing woodwork and linoleum top.

7. Display counter section—showing recessed top with book trough tilted for easy reading. Tilting door and partition, hinged at bottom for keeping posters.



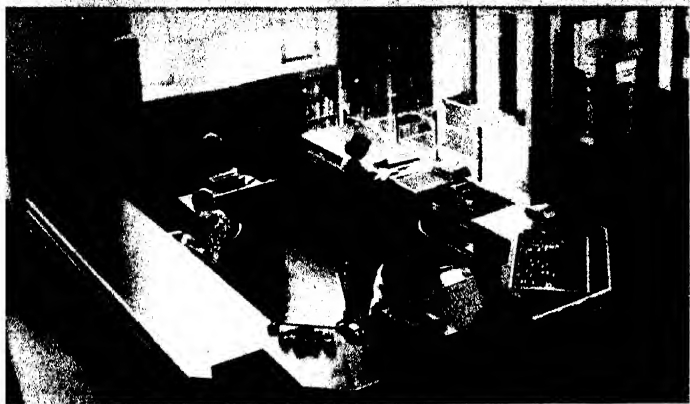
RETURN SPACE

As pointed out by Webb,⁸ the entire routing of the returned books, from the moment of their return to their reshelving, needs to be studied in the desk layout. If slipping is not done at the

desk, the loaded trucks are rolled to the slipping counter in a nearby workroom.

By omitting everything under the desktop in a space 18" or 20" wide, book trucks of 35" height can be run in at right angles next to the slipping trays and the books placed thereon as slipped, ready for sorting and returning to the shelves. In a few libraries, a section of the top is made removable, so that a standard book truck

⁸William Webb, "Delivery desks," *Lib. Jour.*, 55:199-202, Mar. 1, 1930. His discussion of the merits of reversed service-work desk is supplemented by portions of Chs. 13 and 18.



Service desk, charging at front, return at right corner. South Brooklyn Branch, Cleveland, 200,000 yearly circulation. Note five chairs. Note also cut-down shelf for returned books awaiting slipping. The books are "stamped off" on the counter between the slipping trays and a cut-down shelf of generous capacity where books may accumulate. Glass screen to protect them from inquisitive borrowers. Metal-bound linoleum top. Partially screened typing stand at rear of space.

43" high and 39" long may be rolled in and the top shelf loaded. This leaves more floor space for the workers.

Whether to do this last, or run the truck up against the counter, or use a discharging or slipping truck on wheels at some nearby point, out of sight, or take the discharged books to more elaborate slipping counters in a separate workroom, depends on the size of the library and the librarian's ideas in regard to the general desk, the workroom location, and their functions and interrelationships, as discussed in Chs. 13 and 18.

If slipping is done at the "big desk," it is desirable above all else to have enough space to stack returned books while they await slipping. This space should be planned before locating miscellaneous drawers. It should be near, and to the assistants' left, of the return space. (See sliding bin section of the page of standard details, p. 452.) In the many busy central and branch libraries that have only one person on duty, there is no time for slipping the 100 or 200 books that may be returned. This is a bad situation, showing serious understaffing, but the emergency may arise in any library. Shelves under the counter but flush with the face are one answer to this space problem. A better one for libraries having a circulation of over 150,000 is shown in the view of the Cleveland branch; the slipping counter is flanked by a cut-down portion 30" from floor, for returned books, with workspace on both sides of the slip trays, and a

plate-glass screen along the outside line of the desk to keep readers from disturbing the books. There should be a 7" linoleum-covered ledge along the front on which to rest the opened books. Knee holes under slipping trays should be wide enough to accommodate as many assistants as will be working at any one time. For two or more workers a bench is more comfortable than two stools or chairs, as the work involves considerable reaching. The Los Angeles view shows a slipping bench on a large scale in a separate workroom, with cards in sloping banks.

The old-fashioned roller curtain or removable panel-top is only an encumbrance. Why cover the card trays at all? Also, the drop fronts sometimes provided on bookcard or slipping-tray bins are a bit futile compared with finger holes at the ends of each tray for quick lifting and removal.

As for the charging slip bin (book card file) itself, this is a compartment sunk so that 5" cards and 5½" guide cards standing erect in their wood or tin trays will come about ¼" below the desktop. If a removable panel or roller curtain top is used to cover the bin at night, the bin must be about 1" lower; but a cover is not recommended. The trays are 2¼" or 3¼" wide, depending on whether the library uses 2" or 3" book cards for charging. If the desk is being built by an inexperienced company the regular trays should be bought from a library supply house. Heavily tinned trays—3½" or 4" high—are thinner and lighter and may well be used where space is at a premium. The inside construction of the desk is often so heavy that the desirable 18" length for trays must be reduced to 15" or 16".

The future circulation should be estimated for a two-week period, and this figure then reduced by 25% to take into account the books which will come back within that period. An allowance of one foot for every 500 cards should provide enough tray space to cover the usual rate of return, plus guides, wedge blocks, "snags," overdues, and special lots of cards. For a new

library or branch the circulation is likely to be greatly increased, and it is safer to make the bin $1\frac{1}{2}$ times larger than suggested above. Such estimates help one to decide whether or not to keep the slipping at "the big desk." The answer is: as long as possible. Economy comes from compact grouping of the several types of work that must be handled.

A cash drawer on roller suspension, installed at the right of the main return counter, should have easy-sliding cash compartments and a concealed finger release to prevent thefts.

REGISTRATION

Having located the charging, return, and slipping activities, the registration of new borrowers is next considered, according to the diagrams in Ch. 13. The cut-down sections of the large service desks at Mt. Vernon, N. Y. (though not original there), mark a significant advance in handling this part of the work. The reader can sit down and feel he is receiving more attention. Depending on the size of the library, elbow space for one, two, or three registrants at a time will be equipped with large blotter pads and writing materials. Compartments, visible through plate glass, may be cut into the front of the counter for a supply of application, numerical, and borrower's cards. A revolving city directory stand on the counter is a necessity, as both staff and public must consult it.

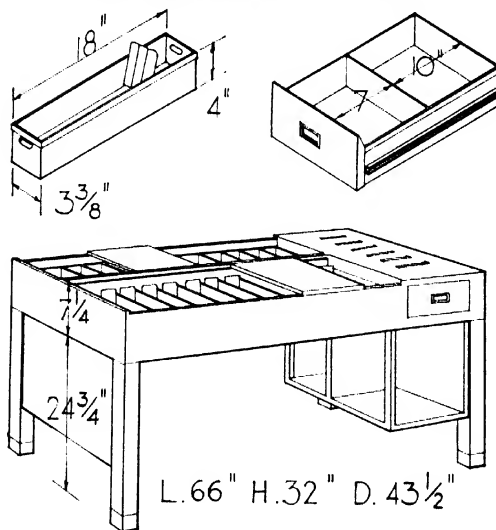
Where should the registration card files be put? Certainly close at hand. The two essential files, alphabetical and numerical, can be built into the counter, *provided* there is room for the activities already mentioned, as would be true in a small library. Half-height cards and trays may be used. In many libraries, the numerical record is typed directly from the applications on loose-leaf sheets. Bound, they take up less room than cards. Estimate only 800 cards per tray, on account of the memoranda clipped to the cards. The lower row should be kept 12" or 15" above the floor to avoid stooping. The three-year future registration should also be estimated. Counting two cards (numerical and name) per

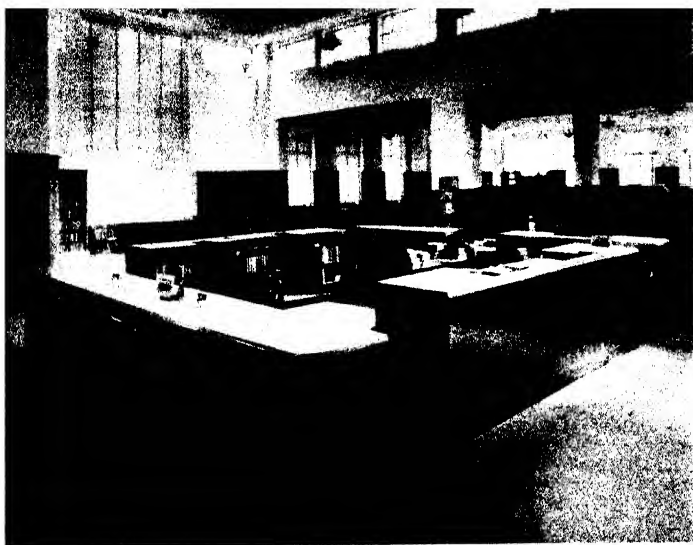


Slipping desk, Circulation Department, Los Angeles central, with book cards in sloping banks. Work shelf at front for opened books, and at back of case for waiting or completed books. Sorting table and bins at right. Shows how a large city circulation is handled.

registrant, the number of trays and the width of space required may be calculated. It saves money to lay out the space with openings to take stock sizes of tray cabinets. (Card cabinets discussed below.) Card cases beyond the capacity of the desk are preferably placed against a wall behind or close to the desk, or in the workroom if it adjoins. For the entire file has to be consulted frequently by the desk assistants working with the public.

Steel slipping table. Assistants at two sides use work boards on roller bearings over the bookcard files. Loaded book trucks are run up to the table and the slipped books are finished at the right and laid on other trucks. "Snags," "mends," etc. are laid on the shelves underneath. Renewal cards are dropped through slots into right-hand drawer. Tinned card trays with finger holes for easy shifting. Details in "A.L.A. Bull." 28:338; 1934. Courtesy General Fireproofing Co.





Main adult charging desk, Mt. Vernon, N. Y., with large work enclosure saving of time and convenient for all. The nearest counter is regular 30" desk height so that applicants may sit down at recessed knee space to fill out their application blanks. Courtesy Library Bureau.

SURPLUS SPACE

Extra counter space may be used for displaying books, either in a sunken trough or in a small rack. Panels along the outside are frequently hinged at the bottom for posters or large flat materials, especially in children's room desks. Shelving in unassigned space on the inside of desks is always useful. Reserves should be kept close to the charging desk, and "snags" near the return desk or slipping files. At some branches there is room for the shelflist as well as the registration file. But there are always odds and ends such as mends and rebinds; a good circulation head keeps them cleaned out every day or two, yet they need a resting place.

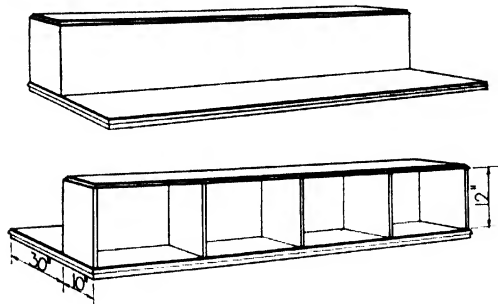
After drawers and shelving come cupboards with hinged or sliding doors. Books should not be screened, and this applies even to ragged rebinds; there is too great a temptation to let them remain there. Cupboards should be used primarily for two or three weeks' supplies only. The interior of a desk is a workshop, not a storage house, and should not be allowed to become a catch-all. The Cleveland branch desk with its partly screened typewriter stand suggests one of the essential provisions—typewriting space. A built-in typing shelf 27" high, 18" deep, 30" long, and 1½" thick, is a boon to all

circulation staffs. There is always a great amount of typing to do. A silent typewriter is best.

REFERENCE SERVICE DESKS

For the reference assistant the smaller number of readers and the longer time given to each makes the regular 30" table height more satisfactory than the circulation desk height; for the reference worker remains seated more of the time. The ordinary office desk is too often used; greater length, specially equipped drawers, and as much shelving in the pedestals as possible are badly needed for the quick-reference tools, card indexes, and other items used constantly. A special L-shaped desk near the entrance, preferably near the workroom also, with shelving on the wall behind the desk, is most satisfactory. The suggestions in Ch. 14 and the above applicable details of circulation desks should be studied, visualizing the assistants' trips to get needed materials for different types of reference inquirers. Placement to avoid daylight glare should be considered, but more important is the part the desk may play in facilitating the handling of reference questions and conserving the energies of the reference workers. In a small library, for example, one end of a 6' or 7' desk may be equipped with extra shelves for files of the *Readers' Guide*, the latest issue kept on a special shelf built on top of the desk end. Staff

Index consulting shelf on reading table top. Can be installed on ordinary table. Should be 12" high, 10" deep, inside, compartments not over 18" or 20" apart to give frequent upright support for heavy volumes. The top comes at convenient height for stand-up consultation, leaving table for other readers. Or, the shelf may be turned around, so indexes may be consulted on the table.



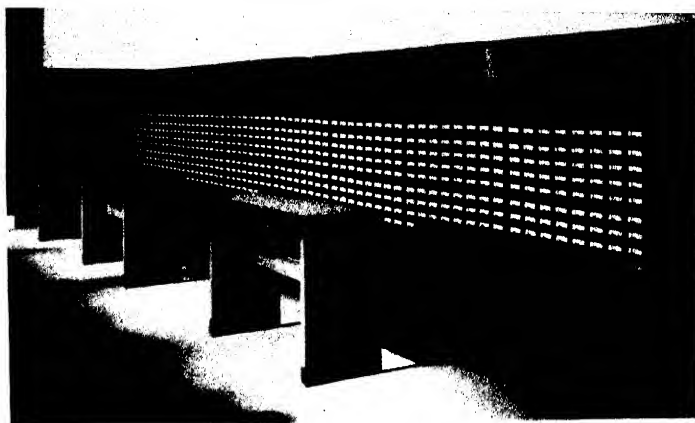
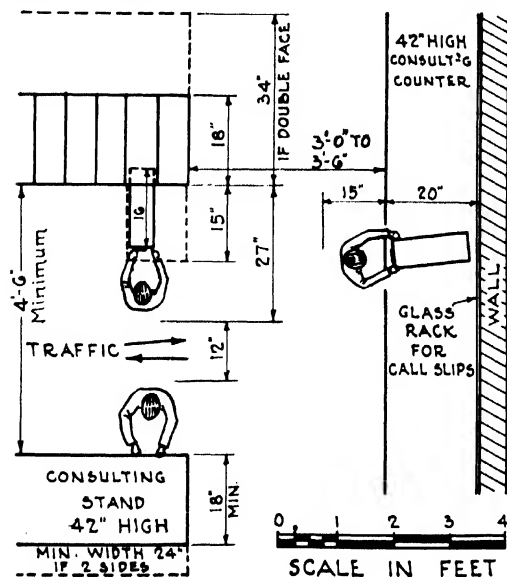
and readers can both use this index, unless a policy is adopted of requiring readers to do their own searching at another index stand. In that case there will be many failures to get what is desired, the assistant will be called on, and unless this index stand is within 10 or 15 feet of her desk, she will waste much time in moving back and forth.

CARD CATALOG CASES

Estimating the size of the card catalog and other card files for a new building requires the co-operation of all who can foresee the public and staff use of each room and each part of the library collection. In the Library of Congress the enormous growth of the catalog has resulted in the removal of most of it from the great central reading room. Like an octopus, the modern card catalog reaches out to consume reader space at a staggering rate, while the librarians stand by helpless to find a remedy.

Furthermore, the primary public catalog is only one of a series of files to be provided for.

Layouts for Card Cases, showing minimum case depth, trays, reader space when trays and sliding shelf are pulled out, traffic clearance and consulting stand. Lowest and highest "usable" trays, 18" and 72"; lowest and highest "convenient" trays 27" and 60", or 10 trays high.



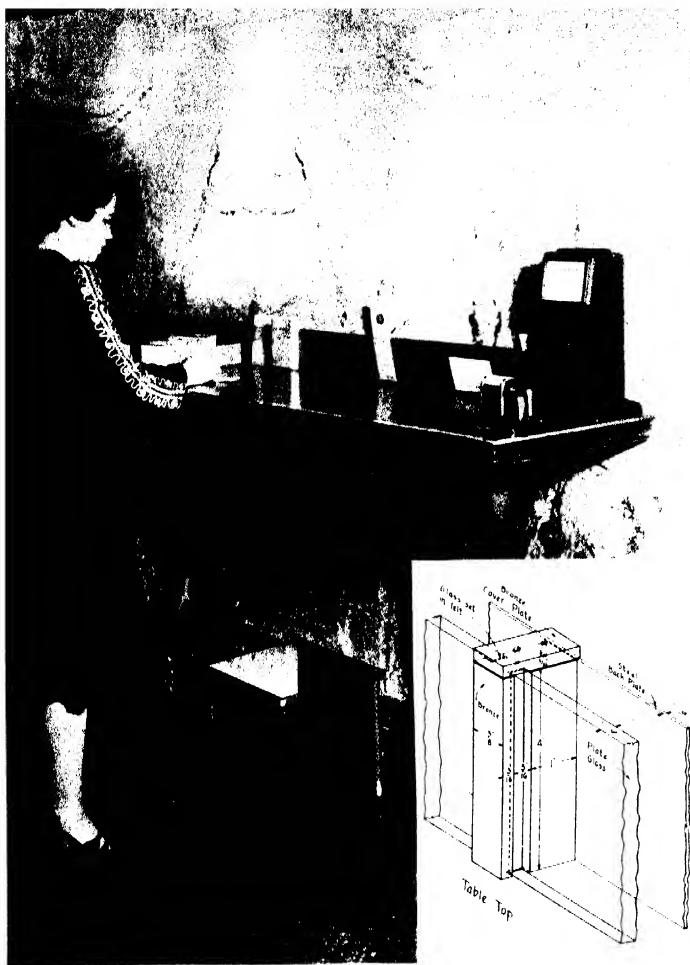
Card catalogs generally expand much more rapidly than anyone foresees. A catalog with fixed space limits will some day arrive at a crisis. At Mt. Vernon, N. Y., eight 96-tray cases are stood neatly end to end like one continuous piece of furniture. With further growth the cases can be set at right angles to the wall in pairs back to back, and additional cases installed. Note the stand-up linoleum-topped consultation tables, always more satisfactory than pull-out sliding shelves. The four lower rows of trays have tilted label holders. Black rubber base. All provision is made for future changes. Photo courtesy Library Bureau Division, Remington-Rand, Inc.

The size of card files is almost invariably underestimated. Federal unemployment projects have produced innumerable library catalogs and indexes which no one foresaw. Some are of the greatest usefulness and will probably be maintained. They suggest how much wider our view of future indexing and records must be if libraries are to meet the increased public demand for information. Departmental catalogs and ready reference indexes of information, mentioned on pages 109 and 346, should also be considered.

Each library must plan the placement and extent of its numerous secondary catalogs and index files, for children's room, public reading departments, and reference rooms, not to mention order and catalog departments. But every effective library, and every public department, will increasingly require card indexes for staff reference work, and catalogs for readers. The equipment schedule for every new building should include several extra catalog cases for future use. (See also Reference and Subject Department equipment in Ch. 14.)

FLOOR LAYOUT

In planning catalog cases, distinctions must be made between different types of patrons. Public catalog space in a large and busy public library often becomes very congested. Stopping the



Card catalog consulting shelf, 42" high, with plate-glass rack for call slips and card explaining catalog use. Inset gives detailed diagram of bronze frame for plate-glass strips. Note ink dispenser, pencil sharpener and thief-proof locked pencil holders on chains for reader convenience.

cases at least 4 feet from the corner of a room will avoid part of the crowding. For the same reason, pull-out shelves are impractical at a busy public catalog because they block at least 3 or 4 vertical rows of cards from easy access by other readers. This is not serious in a small quiet library or in most special libraries; but in the city library or large busy branch, consulting tables or counters should be provided instead. The merits of double-faced cases at right angles to the wall and about 5' from it, with a continuous consulting counter or stand along the wall itself, should be considered. The counter should be covered with rubber or linoleum. Counters or stands should have a plate-glassed strip at intervals along the edge, covering call slip com-

partments 3" high, 4" wide and 5" deep. The illustration shows a consulting shelf with a rack against the wall for slips.

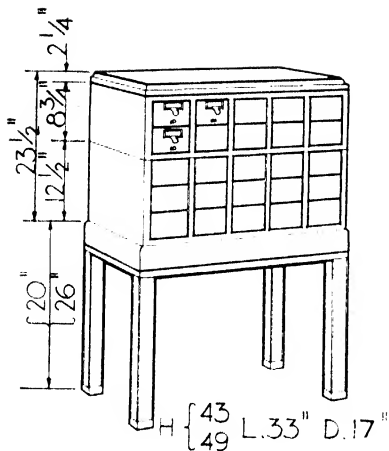
USABLE HEIGHTS

Both adults and children dislike to handle catalog trays that are lower than 24", or higher than 60", from the floor. In small libraries, cases 6 trays high on 26" stands are popular. Library equipment concerns make stands to accommodate separate cases of approximately these heights. On the other hand, capacities will be crowded all too soon, and in larger libraries one should provide all the cases that floor space permits—13 trays high, running from 18" to 72" or 74" above floor, leaving the two or three top and bottom tiers empty for as many years as possible. Cases 15 trays high and extending from 12" to 74" above the floor are sometimes used for research departments which have comparatively few consultants. Every tray will be crowded some day, and unless stock pieces are used originally, the adding of tiers or sections will cause trouble and great expense.

CARD TRAYS

While the individual catalog tray was long ago standardized for 3" x 5" cards (7.5 x 12.5 centimeters), there is considerable variation in the details of the cases and even in the trays themselves. The use of 2" high cards for shelflist, registration and other files, where less space is needed on the cards, may save space but is a dangerous practice; many libraries have had the great expense and nuisance of copying their catalogs on standard full-size cards.

Standard trays are 5 1/16" wide, 3 9/16" high, and 14 3/4" deep inside. A metal follower block takes 1/4" at the rear of the tray. Longer trays may appear to save space but they are too long for public use and are not liked by staff members because of their extra weight. One standard tray can hold 1200 medium-weight, 1500 light-weight cards, but with the guide cards and follower block, 1000 and 1300 are safer figures. To estimate catalog capacity, take the book-



Catalog cases of standard dimensions for children's and adult rooms. Courtesy Library Bureau.

stock estimate for 20 years hence and multiply by 4 cards per volume, to cover the average of author, title, subject and analytic cards. Allow $6\frac{1}{2}$ " width on centers for each vertical row of trays and partitions, and 4" height per tier, beginning 1" above the base or stand.

Drawers are made of fine-grained hardwood, sliding easily without binding. Dovetailed joints are standard, as are rounded back corners to reduce scarring when trays are replaced. Up-sloping fronts or label holders are now available for lower tiers, and large two-compartment label holders with ring pulls are very desirable to avoid dropping the trays. Trays in public catalogs, though not in staff catalogs, will have rods to hold the cards, fastened by screw threads or finger release catches, or unlocked by keys, depending on the probable amount of tampering by mischievous young readers.

LIGHTING AND RECESSING

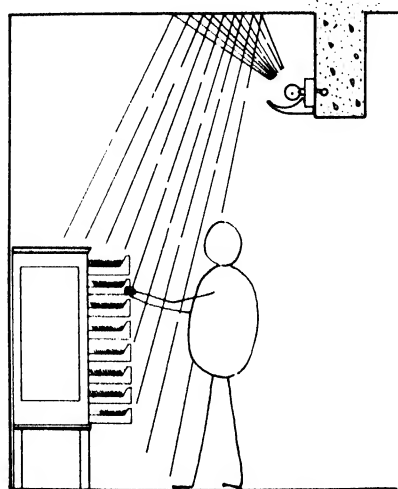
The best light for the catalog comes from overhead fixtures which give plentiful well-diffused light of at least 10 foot candles. No fixtures attached to the cases can give this result. When trays are pulled out, the reader is often looking at cards—sometimes dirty or blurred—as much as 12" or 14" from the front of the case. The light must come from a source farther back than

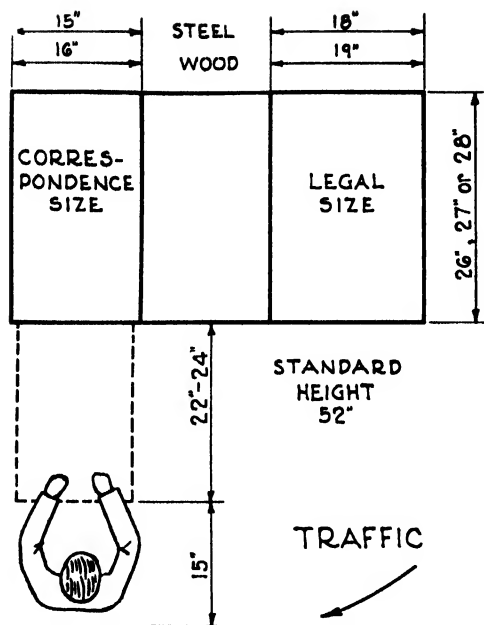
that, preferably a foot or so back of the reader and reflected from the ceiling. This fact influences the decision as to recessing the cases in the wall. Recessing is economical because no exterior shell is needed for the case of trays and the recess can be left in the rough. Recessing may be handled attractively as an architectural detail and it saves floor space. But very often the light reflectors are too close to the cases and there is excess glare near the outlets. Provide wall or base outlets for future local lighting.

VERTICAL FILES

In proportion to their importance in library work, vertical files have received as little attention as any item in the entire list. Often steel cases of varied makes and sizes are placed as an afterthought against beautiful wood paneling. Seldom is any architectural provision made for these "library stepchildren." But they are *major* equipment; the architect must provide wall space for them. Pamphlets, clippings, and advertising matter which answer a host of questions, are increasingly being gathered and ar-

Devices which deliver and reflect sufficient light at the proper angle are extremely desirable for all who consult catalogs. The usual outlets in the middle of "bays" seldom give adequate lighting in such special areas. A ceiling beam near and paralleling the catalog may be finished with concealed conduit and side outlets for lamps which will reflect light from the ceiling onto the face of the cards.





Vertical File floor spacing. If space for cases is to be recessed the dimensions should be checked on the actual furniture that is to be bought, or the maximum figures above should be allowed.

ranged in progressive libraries, and the vertical file, as noted under *Pamphlets* in the previous chapter, is the economical and convenient place to put them. At least two 4-tray vertical files per assistant should be included in the equipment schedules of public departments, or branch or village libraries. A great many files are needed in certain departments, such as local history and general reference. See Ch. 14.

FILE CASES

Wood cases cost more than those made of steel and are generally 3" or 4" shorter inside the trays, but they have the same roller suspension equipment. Steel cases are entirely satisfactory except that they do not match the woodwork. The diagram shows the spacing of standard sizes. Unfortunately, different makes vary by an inch or so and it is almost impossible to get two manufacturers' cases which will be uniform side by side. The chief point to check on is the method of suspension with ball or roller bearings. The file case should be tested with a

drawer loaded with material, to see if it runs all the way without being forced. Beside the four-drawer correspondence size, legal or jumbo sizes will be needed in some departments. Flexi-files, an accordion device which slides along on steel guides, are almost indispensable where files are used continually, as they keep the contents from "bunching" and make insertions and consultation easier.

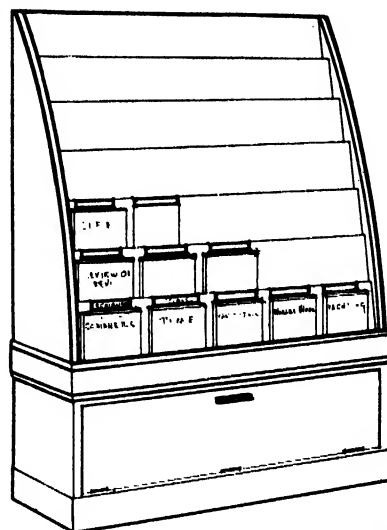
A series of three or more cases will look much better in a public room if provided with a single-paneled top and facing strip to give an appearance of continuity. Cases three drawers high, such as those used for picture collections, can have this top finished in linoleum for a consulting stand, if that should appear to be more economical than having the case 4 tiers high with a consulting table nearby.

SPECIAL PIECES

MAGAZINE RACKS

In Chapter 41, magazine display racks built-in along the wall were considered as a part of the

Standard dimension adult magazine display rack accommodating approximately 35 titles. A new adjustable metal holder lines up the tops of all magazines on a uniform line, no matter what their dimensions. Can be built any length or between standard shelving uprights. Courtesy Library Bureau.



H 60" W 48" D 24"

shelving. Separate racks are not standardized in height or length; though 7 compartments, 60" high, 48" long, and 22" deep are usual, providing for an average of 35 magazines. The cross partitions are on 5" steps, with 2" space between them. A new metal device permits magazines of different sizes to be arranged in one alphabet, supported on steel holders adjustable in height so that the tops of all are on one even line regardless of their size.

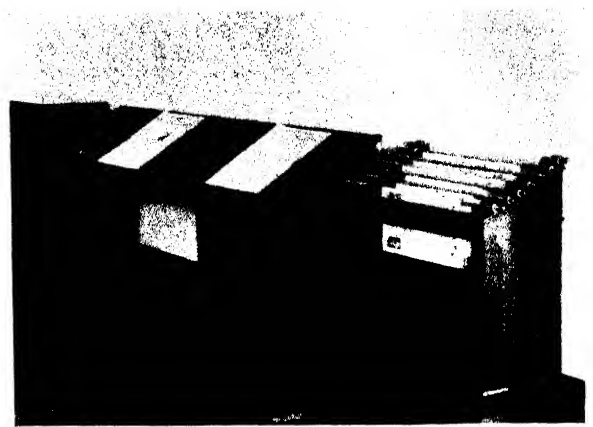
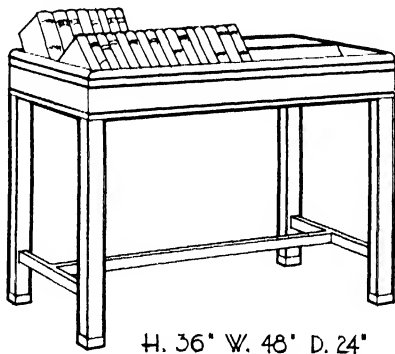
NEWSPAPER RACKS

Newspapers are most easily handled on special newspaper rods, one for each paper, kept in a rack built into the uprights of standard shelving as shown in Ch. 41. The rack may be a separate piece of furniture.

SPECIAL RACKS AND STANDS

Space does not permit discussing or illustrating a wide variety of book display pieces and atlas and dictionary stands. But the common examples are to be found in library equipment catalogs, and many additional ones, including exhibit pieces, are diagrammed and described in the *Enoch Pratt Library Furniture Drawing Book and Specifications*. Furthermore, every librarian has seen furniture embodying new ideas and new designs which he would like to have his architect duplicate or adapt.

Readers always appreciate small, specially selected groups of books on display. Courtesy Library Bureau.

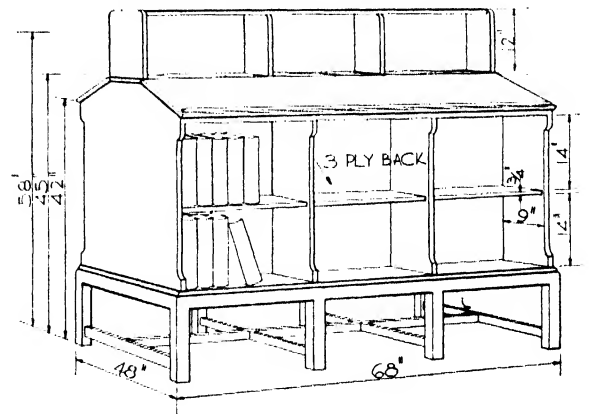


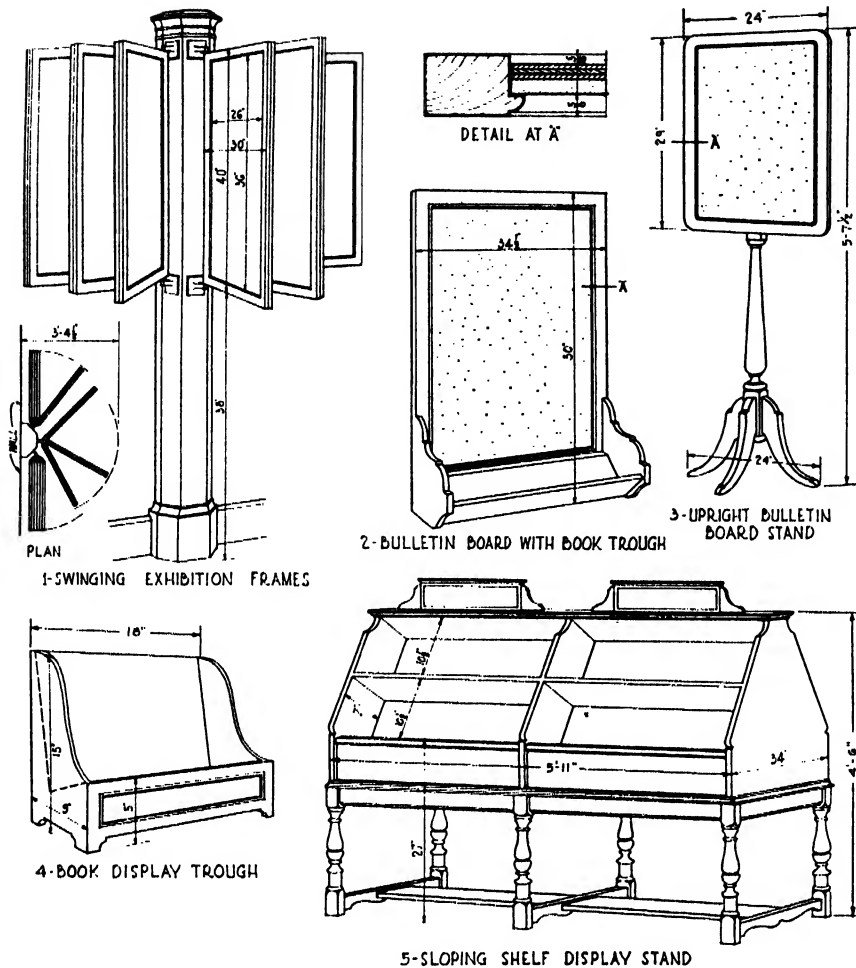
Newspaper rack and consulting stand, College of New Rochelle, N. Y. Suitable for small or medium-sized public library, or even for a large one if it attempts to keep down the number of newspapers and their readers, discouraging loafers and undesirables. Courtesy Library Bureau.

MAPS AND PRINTS

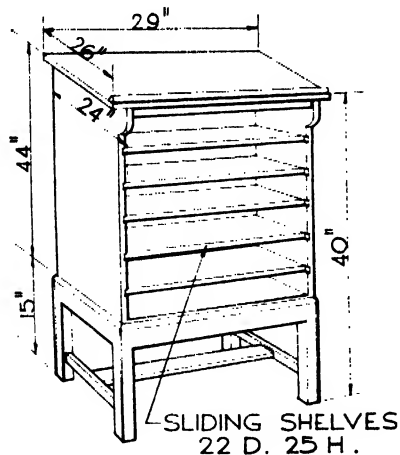
Two types of material which require special equipment are maps and prints. The usual small collection of maps in the average public library consists of road maps, advertising maps, picture maps, and folding maps of the countries whose current events are under discussion; and the U. S. Topographic Survey maps. The former may be kept in vertical files, the latter are ordi-

Consulting case for encyclopedias and indexes with frequent uprights to keep heavy books from tipping over; two sides for shelving and for consultation. The most-used indexes or books are kept on the shelf on top of the rack; edge of sloping shelf has safety strip. Such a stand should be located near the reference service desk for joint staff and public use.





Atlas consulting stand; five-ply veneer pull-out shelves 1/4" thick with 1-1/16" header on the front edge, grooved on the under side for finger grip.



narly kept in a steel or wood case, 40" or 42" high, with shallow drawers 2" x 26" x 38" inside. This allows 2" around the edges in handling 24" x 36" sheets. Laying a sheet of 3/16" plywood or heavy binder board on the maps in each drawer will help keep them flat. A similar sheet at the bottom of the drawer, with a strong tape on both front corners, permits lifting the group of maps over the edge of the drawer front and makes consultation easier with less wear on the edges of the maps.

Because of the high cost of special cases, both wood and steel, the equipment company catalogs should be checked for stock sizes. There are enough U. S. Topographic Survey sheets, 16½ x 20", to warrant a smaller case with trays 2" x

18" x 22" inside. Several libraries have found it cheaper to get one or two such cases made up at a mill or in a high-school shop than to purchase the better but more expensive manufactured equipment. Dovetailed corners, rabbetted sides to receive the 3-ply bottoms, extra strips around the under edge to provide for shrinkage of the bottom, smooth running side strips, are vital points for homemade drawer cases. Larger and more valuable maps, plates, and charts are either housed in flat drawers or filed vertically, on the assumption that they will be handled or brought out to the reader by careful assistants.

Unlike the ordinary flat drawers noted above, the more elaborate map case will probably be much larger, perhaps 38" x 50" inside the trays. The size and weight will require steel cases, preferably with ball-bearing suspension slides. A patented drop front on the drawer has a thin steel flap or compressor to turn back upon the front edge of the maps to save their edges.

Any method of filing valuable maps, either vertically or flat, may involve mounting or fastening them to a stiff mounting board, and covering them with transparent material of cellophane type. If maps are so mounted it may be feasible to stand them in large steel vertical file cases such as those used by architects and engineers for their drawings. Less expensive maps may be folded and kept in ordinary vertical file cases. Some map companies sell mounted folded maps, to be loaned for display in class and lecture rooms.⁹ Roller maps are most conveniently stored in large wooden or steel cabinets partitioned vertically or horizontally.

The "Cello-Clip" (Globe-Wernicke Co.) is an ingenious vertical steel case with cross rods at the top, about eye height, from which a great number of large maps may be suspended. Heavy split eyelet tabs are pasted to the map corners, and these engage the rods and hold the maps

⁹Walter Thiele. *Official map publications*. Chic., Amer. Lib. Assoc. 1938. p. 294-295. Equipment in several libraries is discussed in: Amer. Lib. Assoc. Committee on Public Documents. *Public Documents*. 1936. p. 100-122. Also L. A. Brown. *Notes on the care and cataloging of old maps*. 1941. p. 17-27.



Map room, Philadelphia Free Library; capacity 100,000 maps, some in bound form on roller shelves at left; large individual maps filed in plan drawers at right; small maps filed, some folded, in vertical files at end. Courtesy Art Metal Construction Co.

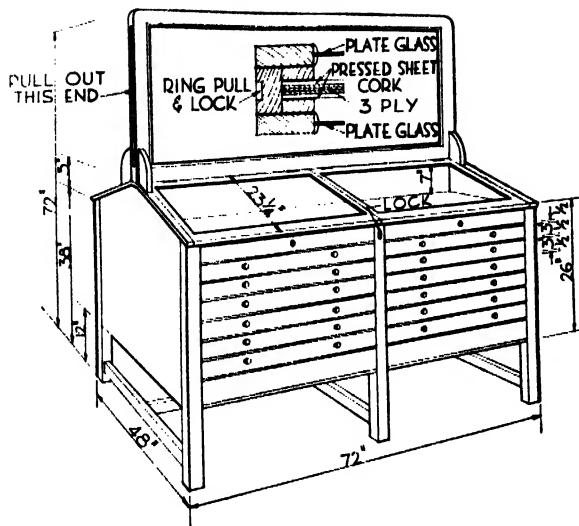
safely in place, yet permit them to be unhooked and withdrawn. It is something like a vertical file upside down, and is especially good for holding a quantity of maps of varying sizes.

FOLIOS

The larger the volume the more it is damaged simply by standing on the shelves. It should be laid flat, especially if it has any special value, as have art plates, rare books, and newspaper volumes. Open shelving 15", 18", and 24" deep may be adequate for some large volumes, provided the shelves are adjustable so as to be not over 4" or 5" apart, permitting only one or two volumes to be piled in a single space. More than one heavy volume should not rest on another because of wear and tear in handling.

The next step, in the case of more valuable volumes—such as expensive art works—is to have cupboards, either as separate pieces or built against a wall, with glass or panel dustproof doors, hinged or rolling. Shelves may have rollers set in them to facilitate replacing volumes. Such cases, to be most convenient, will not be over 42" or 44" high; the top used for consulting.

Very expensive or rare works may be still more carefully protected by special felt-covered steel pull-out shelves, supported on jumbo ball-bearing extension slides at a convenient height



Combined double-faced map or print case of locked drawers, with sloping display case and sliding cork display board behind glass. Useful in local history, document or map room.

of 30" to 44". The books stay on the shelves and are opened and consulted without lifting or moving them at all.

PRINTS AND PICTURES

The usual public library picture collection consists almost entirely of advertising material and pages taken from magazines and is heavily used by school teachers and pupils. It is housed in a row of legal-size vertical file cases, preferably steel, which may be supplemented by a few jumbo-size cases (18 1/2" wide inside the trays). Such a filing system may also be used for the colored prints costing up to 25 cents or 50 cents each, and the mounted photographs—protected by glassine or similar paper—which, with magazine reproductions, comprise the everyday working collection of an art department.

More expensive prints, especially engravings whose surface must be carefully protected, require dust-proof boxes or portfolios. The cases and other equipment needed for them depend so largely on the type, value, and use of the material that no definite statement can be given.¹⁰

MANUSCRIPTS

The large public library gathers many manu-

scripts, especially if it has a local history department. The equipment for handling these is not standardized however, because of the variety of materials and the different conditions of their use. Heavy dustproof cardboard boxes, possibly covered with cloth, are the usual containers, with the individual sheets gathered into folders for convenient handling within the boxes. Whether the boxes should be laid on ordinary shelving or have steel, fireproof, glassed, or glass and wire-screen doored cupboards or cases, depends on their rarity and supervision. Each library must work out its own method according to the elaborateness of its equipment program.¹¹

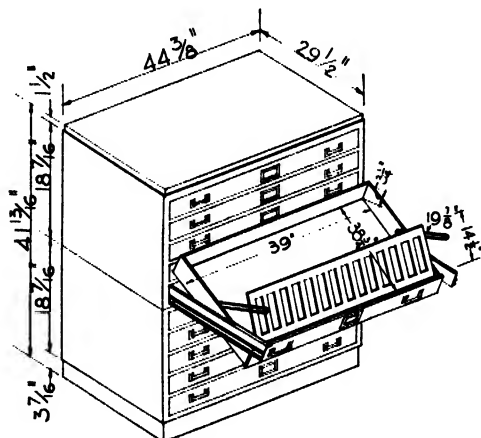
BOOK TRUCKS

Someone should write an essay on *The Psychology of the Library Book Truck!* All department heads, branch librarians, and especially catalog assistants, yearn for a book truck as al-

¹⁰See detailed discussion in Talbot Hamlin's *Some European Architectural Libraries*. 1939. N. Y., Columbia Univ. Press. \$3.00. Chapter 5.

¹¹H. C. Schultz. Care and storage of manuscripts in the Huntington Library. *Lib. Quart.* 5:78-86. Jan. 1935. Also two articles in Amer. Lib. Assoc. Committee on Public Documents. *Public Documents*. 1938. p. 365-379. Also Hilary Jenkinson. *Archive Administration*. London. 1937. p. 40-50, and appendix V, p. 205-215.

Steel map or poster case, in sections. Equipped with fixed or drop fronts. The slotted steel flap or compressor is lifted to handle contents; then pushed down to hold the front edges of material flat. Drawers pull out on suspension guides and then tip up to desired angle. Courtesy General Fireproofing Co.

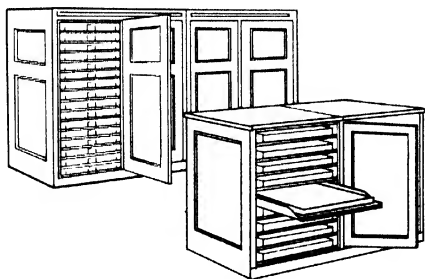


most a personal possession, as well as a means for the easier movement of books. This is more than a "complex." It represents a real need, and observation suggests that the new building should have half as many trucks as there are staff members. Only the best library trucks made by experienced library supply companies should be bought, with 5" ball-bearing swivel wheels, rubber bumpers, and shelves braced to prevent rocking back and forth under heavy loads. A library book truck is a piece of major equipment and departmental needs should be checked and various sizes and makes compared before it is bought for the larger library.

REMINDERS

1. Avoid sliding doors on bookcases and other furniture which will be used by many readers, as the wear and tear is too great. However, on cases for rare or valuable books, or where readers must ask an assistant before handling a book, roller glass doors are desirable.
2. Check the adequacy of wide shelving in departments having folios and other large volumes, such as newspapers. Some shelving

Special print cases with dustproof doors. Wall cases 16 shelves high accommodate "Solander" boxes, heavy flat boxes whose tops and bottoms are joined at the back and open out flat, for mounted prints 22" x 28". The counter height case has 9 pull-out trays to take portfolios. Courtesy Library Bureau.



Folio case, two sides, with sliding glass doors for heavy art books and portfolios. Flat top has three display spaces 2" deep with plate glass. In foreground is corner of sloping-top table while beyond folio case are low magazine rack and picture files, not interrupting view.

- should have roller shelves for the heavy volumes.
3. Check all departments and workrooms for adequacy of (a) Shelving of all types that will be needed, and (b) Cupboard space for supplies.
4. See that a small bookcase is placed or built-in close to all isolated service desks, such as the one for the assistant at the public catalog.
5. Check all offices, workrooms, and reading rooms for adequacy of (a) Vertical file cases, (b) Card cases, for catalogs, indexes, order files, etc. Cover all staff and reader activities.
6. Check carefully all the items in the exceptionally valuable article: H. T. Kennedy, "Library Equipment and Furniture." *Lib. Jour.*, 50:149-62; Feb. 15, 1925. This is full of helpful ideas, very complete for branch libraries, and based on long experience with the branch buildings at Los Angeles. Check also the detailed account of many pieces of equipment, especially for larger libraries, in *A.L.A. Bull.* 28:337-345; June, 1934.
7. Make sure that specifications cover installation and inspection of furniture. Check F. K. Walter on specifications, *Lib. Jour.*, 50:163-65; Feb. 15, 1925.

INDEX

Public libraries named for persons appear under name of city, followed by library name. But branches appear under branch name, and, if named for an individual, the whole name is used, e.g., George O. Carpenter branch, St. Louis public library, with cross references from Carpenter and St. Louis. Where fewer than six references to a library are given, the detailed topics are not listed. Where numerous detailed topics under a heading are listed, the first group are of a more general nature, the second group more specialized. Illustrations appear as il.; diagrams as diag.; plans are so indicated. Architects are given as arch.; public library is abbreviated p. l.; free public library, f. p. l.; memorial library, m. l.; and branch, br. Some architects appear under their own names and also under that of their firms. This index prepared by Ruth H. Barkley, Lillian Callahan and Mary H. Seem.

- Abramson, L. A., arch., 9**
 Access, *see* Routes, reader
 Accessibility, 352. *See also* Levels
 Acoustics, *see* Noise reduction
 Ada, Okla., p. l., 248; plan, 249
 Ade, B. M. and C. C., archs., 287
 Additions, *see* Remodelling
 Administrative policies, 24-25
 Administrative rooms, *see* Offices
 Adult education, 3, 207
 Advisory services, architect, 13, 55-62; engineer, 61; fees, 60-61, 68, 69, 71, 73; librarian, 13, 16, 23, 55-60
 Affability, 353. *See also* Design
 Agawam, Mass., f. p. l., 222; exterior, il., 368; plan, 223
 Ainsworth, George, cited, 401
 Air conditioning, 407-410, 425-426. *See also* Heating and ventilating
 Air ducts, 410
 Akron, O., p. l., *see* East br.
 Albany, N. Y., p. l. (Hermanus Bleecker, central), maximum shelving, 354; plan, 268; plan-arrangement, 260, 341; relation to neighboring library, 25; shipping room location, 197. *See also* John A. Howe br.
 Albrecht and Wilhelm, archs., 376
 Alcoves, 103, 104, 134; il., 104; plan, 103
 Alden and Harlow, archs., 253
 Alderson, G. W., arch., 87, 94, 110
 Alexander Sanger br., Dallas, Tex., p. l., 98, 246; plan, 247
 Aliquippa, Pa., B. F. Jones m. l., bookshelf lighting, 396; cubic-foot-cost, 69; interior, il., 92; plan, 235; plan-arrangement, 234-235, 265; steel bookcases, 428
 Allegheny, Pa., p. l., 9
 Allison and Allison, archs., 229
 Alterations, *see* Remodelling
 Alternates in contracts and bids, 65-67
 Aluminum shelving, il., 440
 American Institute of Architects, 60-63, 65, 67; publications, 60, 62, 63, 65
 American Library Assoc., motto, 10; standards, 17, 25, 28-29, 32, 33, 35, 37, 42, 44; *Survey*, cited, 48, 104, 112-113; advisory services, 368-369; Committee on Library Architecture and Building Planning, 59. *See also* Bookstock; Circulation; Personnel; Population
 Amherst, Mass., Jones l., Boltwood Room, 123, 284, il., 114; children's room location, 340; exterior, il., 16; lighting, 396; plan, 285; plan-arrangement, 284, 286, 287, 353, 358
 Angeles Mesa br., Los Angeles p. l., plan, 229
 Ann Arbor, Mich., newspaper building, il., 8
 Architect, duties, 13, 55-62, 443-444; fees, 60-61, 68, 69, 73
 Architectural competitions, 61-62; prize designs, ils. and plans, 372
 Architectural library, 119
 Arcas, proportions, 79-80; combined, 41-44; floor, 22, 40-44, 78-81; preparatory depts., 159; reference and reading rooms, 129-132; stack, 138-142, 413-415; workroom, 164-166, 184-186. *See also* Cost, cubic foot
 Arnett br., Rochester, N. Y., p. l., plan, 378
 Arrangement of the plan, 215-354; control by central desk: Carnegie rectangle, right-left plan, 215-225, right-left with stack, sexpartite, 226-239, H, U, L and V, 240-251, trefoil, quatrefoil, radial theory, 252-264; control from two desks: children separated from adults, 265-275; desk controlling entry: other areas separately controlled, 275-287; large city libraries: low, widely extended, cross drafts, 288-293, compact, book-stack at rear, 294-307, compact, central or tower stack, 308-319, compact, open plan, stack beneath, 320-334. *See also* Planning; and names of different departments
 Arrangement diagrams, *see* Plans
 Art dept., 117, 187; plan, 115
 Art galleries, *see* Museums
 Art Metal Construction Co., 427
 Asheim, Leonard, arch., 248, 257
 Ashton and Evans, archs., 267
 Asphalt tile, 385, 386
 Assistants, *see* Staff
 Associated architect, *see* Advisory services
 Astor l., New York, 4
 Athenaeum, *see* Westfield
 Atlanta, Ga., Carnegie l., 181
 Atlas stand, il., 464
 Attractiveness, *see* Design
 Auburndale br. (Plummer memorial), Newton, Mass., f. l., 248; plan, 249
 Auditoriums, *see* Lecture rooms
 Austin, Tex., p. l., cost percentage break-down, 73; cubic-foot-cost, 69; plan, 291; plan-arrangement, 288, 291; ventilation, 351
 Ayer, T. P., cited, 308, 310
 Ayres, A. B. and R. M., archs., 241, 378
Babb, Cook and Willard, archs., 275
 Bailey, L. J., cited, 381
 Bailey, W. L., cited, 2
 Bailey br., Gary, Ind., p. l., desk-workroom, plan, 172
 Baker, J. W., arch., 136
 Balcony, *see* Mezzanine
 Baldwin, C. F., cited, 17
 Baldwin p. l., *see* Birmingham, Mich.
 Baltimore, Enoch Pratt f. l., areas,

- 42; art and music dept., plan, 115; hookracks, 206; building specifications, 67; capacities, 29, 35; charging desk, 96, 99; children's entrance, il., 84; circulation workroom, 182; cost breakdown, 73, 74; cost, cubic-foot, 69, 70; cost, operating, 52; Edgar Allan Poe room, 123; entrance, 304; exhibit windows, 107, 201, 279, il., 204; exhibit workroom, 206; *Furniture drawings and specifications*, cited, 448, 451; history, travel and biography depts., workrooms, diag., 176; industry and science dept., plan, 112; lighting, 129, 130, 176, stack, 423; literature dept., plan, 132; local history dept., plan, 113; location of departments by floors, 342; noise reduction, 106-107; office and workroom location, 185; open plan, 7, 144; open shelving, 353; plans, 324, 325, 326; plan-arrangement, 324, 326-327, 328, 332; plans, development of, il., 19; preparatory depts., plan, 160; proximities, 115; reference dept., general, 114, 347; service zone, 177, diag., 175; shipping room, 196, il., 197, bins, diag., 195; sidewalk level, 83, 279, 330, 332, 352; skylight, 394; stacks, il., 413, location, 100, 140, 350; study tables, individual, il., 118; subject-departmentalization, 113, 114, 320-321, 349; table spacing, 131; waterproofing basement, 385; young people, provision for, 348. *See also* Hampden br.; Walbrook br.
- Baltimore, *see* Peabody Institute I.
- Banks, remodelling, *see* Remodelling
- Barker, M. I., arch., 229
- Bartlett, M. A., cited, 54
- Barton, LeRoy, arch., 245
- Barton, M. N., cited, 114
- Base at foot of wall, bookcases, etc., 386-387
- Basements, 193-200; children's room, 147-148, 265-271, 340-341, il., 150; lecture rooms, 209; room checklist, 193-194; stacks, 138, 144; waterproofing, 384-385; workrooms, 182-183, diag., 183, il., 182. *See also* Levels
- Basements, buildings without, 42, 351-352
- Baskervilland Lambert, archs., 94, 311
- Beauty, *see* Design
- Beebe m. l., *see* Wakefield
- Belmont, N. H., p. l., 220; plan, 221
- Bend, Ore., *see* Deschutes county library
- Bennett and Haskell, archs., 260
- Bent, H. S., arch., 243
- Berkeley, Cal., p. l., children's room, 340; entrance, 86, 341; financing, 20; plan, 295; plan-arrangement, 269, 295; reading and reference rooms, 110-111; plan, 111; shipping room, 197; work and staff rooms, 184, 351, diag., 183. *See also* Claremont br.; North Berkeley br.; South Berkeley br.
- Bertram, James, cited, 8, 218
- Bexley, O., p. l., 222, 240; plan, 241
- Bids, 64-65, 71-72. *See also* Contracts
- Billingham and Cobb, archs., 225
- Billings, J. S., 6
- Bindery, 197-200; plans, 199. *See also* Workrooms, mending
- Birmingham, Ala., p. l., bookstock location, diag., 345; circulation dept., location, 346; cost breakdown, 73; cost, cubic-foot, 69; doors, 85; exhibit windows, 201; intermediates, location, 348; location of depts. by floors, 342; plan, 297; plan-arrangement, 296, 297, 341, 351; reference room, diag., 347, il., 103; shipping room, location, 197; site, 47; stack location, 142, diag., 142; subject-departmentalization, 349
- Birmingham, Mich., Baldwin p. l., 234; plan, 235
- Bishop, W. W., cited, 155, 159, 446
- Black Rock br., Bridgeport, Conn., p. l., 246, 248; plan, 247
- Blair, W. D., arch., 235
- Blanchard and Barnes, archs., 227
- Bleecker l., *see* Albany
- Bley and Lyman, archs., 367
- Blind, work with, 200
- Bloomfield, N. J., f. p. l., 166, 190, 266, 340; plan, 267
- Blouke, Pierre, arch., 294
- Blueprints, *see* Plans
- Bodleian Commission, *see* Oxford Univ.
- Bohacket and Brue, archs., 271
- Boiler room, 410
- Bolton, Conn., l., plan, 214
- Bond Hill br., Cincinnati p. l., exterior, il., 376; interior, il., 429
- Bond issues, 18-21
- Bookcases, details, diags., 429-438, 441, 442; double-faced, 133-135; exhibit, 206; radial, 135; steel, 92; wall, 387-388. *See also* Shelving
- Booklifts, 159, 187, 390, 421-422; shafts, 390, 422
- Bookmobiles, 27, 375
- Bookracks, 206, 463; ils., 463, 464
- Bookstacks, *see* Stacks
- Bookstock, branch, 29-32, 49, 136; checklist, 76, 138-140; location and access, with plans, diags. and ils., 133-144, 343-350; per capita, 43; shifts, 14, 76, 324; in six large buildings, 35; size, 28-32; turnover, 135-136; unaccessioned, 14, 29, 30; unbroken sequence, with diags., 343-349. *See also* Open shelving; Stacks
- Boston Athenæum, 4
- Boston p. l., Bates hall, 129, diag., 130; branches, children's rooms, 362, cost, 68, intermediates, 121, plan-arrangement, 254; interior court, 128; plan-arrangement, 6, 11, 352, diag., 350; windows, 84. *See also* Boylston br.; Faneuil br.; Mattapan br.; Parker Hill br.
- Bostwick, A. E., cited, 13, 200, 362, 446
- Bower, W. F., jr., arch., 366
- Bowerman, G. F., cited, 282
- Boylston br., Boston p. l., 98, 121, 254, 394; plan, 255
- Boys and girls house, Toronto p. l., 381
- Bracket type stack shelving, 416; ils., 417, 422, 423
- Bradlock, Pa., Carnegie f. l., 9
- Branch supervisor, 180-182; office proximities, plan, 180
- Branches, with ils. and plans, 375-383; (see also the plan chapters, 215-287); bookstock, 29-32, 49, 376-377; buildings per population, 26, 49, 282, 375; buildings, rented, 13, 17, 380-381; checklist, 382-383; circulation, 27, 34; janitors, 54; personnel, 36, 50, 375-376; population, 27, 47-48; reference work, 103, 379; seating proportions, 377-378; service area, 49; diags., 48, 382-383; shipping rooms, with ils. and plans, 195-197; sites, 47-49; staff quarters, 383; workrooms, 167-171; children's, 381; regional, 381-382; schoolhouse, 378-380; southwestern, with plans, 228-231. *See also* Central vs. branches; Circulation desk
- Branches, statistics, bookstock, 29-32; buildings, number of, 26; circulation, 27, 32; costs, 40; person-

- nel, 36, 37; population, 26, 27, 38.
See also Central vs. branches
- Branigan m. l., *see* Las Cruces
- Brett, W. H., cited, 46
- Brewitt, T. R., cited, 453
- Bridgeport, Conn., p. l., bookstock location, diag., 345; branches, desk placement, 99, operating costs, 54, plan-arrangement, 254, 256, 338, 365; circulation dept. location, diag., 346; financing, 20; intermediates, location, 348; location of depts. by floors, 342; open shelving, 354; plan, 299; plan-arrangement, 276, 298-299, 341; population growth, 25; reference desk location, diag., 347; shipping room and garage location, 197; stack location, 142, diag., 142. *See also* Black Rock br.; Henry N. Sanborn br.; Newfield br.; South Avenue br.
- Briggs br., *see* Frank O. Briggs br.
- Bristol, Eng., *see* Sea Mills br.
- Brooklyn p. l. (Ingersoll memorial, central), bookcase details, diags., 433; building fund, 71; central vs. branches, 26; children's room, il., 132; circulation room, il., 162, location, 346; desk placement, 99; electric ducts, 391; entrance, 85, il., 89; open plan, 7, 144; parent-teachers' room, il., 132; plans, 332, 333, 334; plan-arrangement, 332, 334, 352; public toilets, 194; radiators, diag., 409; shipping room and garage location, 197; trustees' room, 178; venetian blinds, 395; waterproofing basement, 384. *See also* Brownsville br.; East br.; Washington Irving br.
- Brookman, Herman, arch., 377
- Brooks, W. F., arch., 371
- Brown, J. B., 133
- Brown, L. A., cited, 465
- Brown and Von Beren, archs., 221
- Brown Univ. l., 155
- Brownell m. l., Little Compton, R. I., 224; plan, 225
- Brownsville br., Brooklyn p. l., 381
- Browsing room, 123; il., 434. *See also* Reading rooms
- Bryan and Sharp, archs., 225
- Building fund, 68, 71-72
- Building Owners and Managers, *see* National Assoc. of Building Owners and Managers
- Building program, *see* Program
- Building service, 52-54, 78. *See also* Construction, building; Costs, operating; Heating and ventilating; Janitor
- Bulletin boards, 204-205; il., 464. *See also* Exhibits
- Burlingame, Cal., p. l., 250; loan desk, il., 95; plan, 251
- Burrowes, M. R., arch., 119
- Burrowes and Eurich, archs., 235, 280, 323
- Business and economics dept., il., 176
- Butterfly plan, defined, 216, 339
- Cady, C. I., eng., 404
- Cady, G. M., arch., 145, 363
- Cafeterias, *see* Staff rooms
- Camden, Me., p. l., 134, 137, 226; plans, 134, 227
- Campaign, public building, 18
- Canajoharie, N. Y., p. l., 220; exterior, il., 369; plan, 221
- Cannon, G. J., arch., 261
- Capacities, 23; bookstock, 28-32, 35; open shelving, 135-136; readers, 34-35, 128-132; stack, 413-415; staff and work space, 164-166, diags., 169, 170, 171, plans, 168, 169, 170
- Capen, J. F., arch., 267
- Carnegie, Andrew, 7-9, 207, 375
- Carnegie Corporation, 8, 19, 367
- Carnegie Institute, Pittsburgh, 7
- Carnegie library buildings, 7-9, 216-222; graph, 8; il., 7; plans, 219
- Carpenter br., *see* George O. Carpenter br.
- Carrells, 119-120, 144, 418 419; il., 418
- Carrère and Hastings, archs., 279
- Carter, E. J., cited, 12, 85, 95
- Catalog cases, 459-461; expansion, 160-161, 459; ils., 162, 459, 461
- Catalog dept., activities, 154, 156-157, 174; in basement, il., 182; finishing benches, il., 178; furniture, 159-162; il., 155; layout, 157-161; lighting, 157-159; noise reduction, 159; plans, 158, 160, 174; proximities, 155-156, diag., 157; statistics, 161
- Catalog, public, ils., 162, 361, 459; placement in circulation dept., 90-94, 100, 101; proximities, to reference dept., 107, to other depts., 154-155, 297, 299, 300, 306, 310, 312, 346-347, diags., 154, 157, 344
- Catalogs, 154-162; Library of Congress depository, 161; official, 155, 160-161; reference dept., 107, 109; subject dept., 116, 117, 118. *See also* Shelf list
- Cecil, H. E., cited, 380
- Ceilings, 388
- "Cello-clip" for maps, 465
- Cement floors, 385-386
- Central vs. branches, bookstock, 29-32; circulation, 33, 34; costs, 40, 69; personnel, 36-37; population, 26; readers, 33, 34; size, 38, 42, 80
- Central halls in large buildings, with plans, 300-334; il., 4
- Central Square br., Youngstown, O., Reuben McMillan f. l., 201
- Chairs, 449-451; ils., 449, 450, 451; size and spacing, diags., 446. *See also* Furniture and equipment
- Chambers, H. C., arch., 82, 238, 264, 293
- Chappell, Neb., p. l., 220; plan, 221
- Charging, 91, 96-97, 454; desk, diags., 452-456
- Charles Deering l., *see* Northwestern Univ.
- Charles Skelton br., Trenton, N. J., f. p. l., 149, 274; entrance, il., 148; plan, 274
- Chattanooga, Tenn., p. l., 20, 214
- Checklists, basement rooms, 193-194; bookstock, 29-31, 138-140; branches, 382-383; building construction, 384-392; catalog dept., 156-162; county libraries, 371-374; floor areas, 79-80; furniture, 444-445, 467; lecture rooms, 210-211; lighting, 404-405; measurement, units of, 81; mechanical equipment, 78, 200, 390-392; planning, principles of, 13-14, tests for, 80-81; rooms and services, 76-81; shelving, 442; stacks, accessories, 418, dimensions, 413-416; staff rooms, 77-78, 188, 189; workroom activities, 168, 173; workspace division on 3 levels, 182-183
- Chicago p. l., 20, 29, 50, 201. *See also* Hall br.; Hild br.; Legler br.; Newberry br.; Woodlawn br.
- Chicago, Univ. of, library, 82, 390
- Children, statistics: bookstock, 30, 31; circulation, 34; registration, 27; seating, 34
- Children's l., il., 146
- Children's rooms, desk, 147, il., 150; entrance, 83, 147-148, 265-274, 340, il., 84; functions, 145-146, 149; furniture, 151, 152-153, il., 449; heating and ventilating, 151-152, 406; ils. of children's rooms, 132, 145, 149, 151, 152, 153; light-

- ing, 151-152; location, 146-148, 340-341, effect of first-floor location on adult depts., 297; plan, 149; seats, 34; shelving, 152, 434; size, 150; washrooms, 152; workrooms, 150-151, workroom combined with circulation desk, 174-175;
basement, 147-148, 265-271, il., 150; second floor, with plans, 282-283; story hour, 151. *See also* Branches, children's
- Cincinnati p. l., 4, 21, 45, 46, 88. *See also* Bond Hill br.; Oakley br.; Pleasant Ridge br.; Westwood br.
- "Circle of knowledge," unbroken sequence of book collection, with diags., 343-349
- Circulation depts., activities, 90-101; exhibits, 101; ils., 90, 162; major elements, diag., 90; at intermediate level, 300; open shelf room, 100; proximities, 92-93, 98, 100, 346, to reference dept., 107-108; relation to other major elements, 346, diag., 344
- Circulation desks, construction details, with diags., 451-458; diags., 97, 98, 99; function, 90; ils., 91, 92, 94, 95, 148, 361, 456, 458; location, with diags., 93-94, 97-100; relation to other major elements, diag., 344, to stack, 100, to workroom, with ils. and diags., 166-173;
adjoining workrooms, 280-281; combined with children's, 147; "island," 170, 242, 248, 258; reversed, with plans and diags., 93, 99, 170, 171, 172, 256-257
- "Circulation" of traffic in plan, defined, 216
- Circulation statistics, per assistant, 33; per branch, 27; per capita, 33, 43; centrals and branches, 32; children's, 145; proportions, 34; stations and schools, 33; in V.S.C. formula, 32, 41-44
- Circulation workrooms, 166-174; activities, 92-100; plans, 168, 169, 170, 171, 172, 174; relation to circulation desk, 92, 100, diags., 90, 93, 96, 97, 98, 99; split-off of work, 95-96, 99, 166-174
- City libraries, *see* Large city libraries
- Civic center, 45
- Claremont br., Berkeley, Cal., p. l., 258; plan, 259
- Clark, E. H., Inc., archs., 123, 286
- Clause m. l., *see* Sewickley
- Clerestory windows, 169, 394; ils., 91, 125, 162, 166, 366, 387, 394
- Clerk-of-the-works, 59, 67
- Cleveland p. l., central library: capacities, 29, 35; charging desk, 96; circulation dept. location, diag., 346, workroom, 182; cubic-foot cost, 69; elevators, 88; exhibits, cases, 204, equipment, 206, windows, 201; general reference dept., 114, 348; John G. White room, 113, 119, 206, 348, il., 116; location of depts. by floors, 342; open shelving, 354; order dept., il., 156; plan-arrangement, 6, 7, 314, 316, 317, 324, 348; plans, 314, 315, 316; proximities, 115; public toilets, 194; reader's advisory desk, il., 101; rented building, 17; Robert Louis Stevenson room, 120; school libraries, supervision of, 380; shipping room location, 197; sociology dept. lighting, 397; stack location, 140, 143, 144, 304, diag., 350; staff rooms, 190; subject-departmentalization, 112, 113, 114, diags., 348, 349; workroom location, 176, 177, plan, 176; young people, 348; branches: desk, 171, il., 456, sites, 46, workroom, 163. *See also* Glenville br.; Mt. Pleasant br.; South Brooklyn br.; West Side br.; Woodland br.
- Climatic factors, 230, 232-233, 351
- Clinton br., Newark, N. J., p. l., 148, 274; plan, 274
- Clocks, 391
- Closed stacks, *see* Stacks
- Club rooms, *see* Lecture rooms
- Cochran, M. R., cited, 118
- Coffer lighting, 401-402
- Coffman, W. E., arch., 369
- Coit, Robert, arch., 271, 397
- Coleman, L. V., cited, 213
- Coletti, C. and P. A., archs., 245
- Columbia Univ. l., 107, 423; bulletin boards, il., 206
- Combination (community) buildings, 9, 20, 207-208, 213-214; diag., 211; plans, 213, 214. *See also* Extra-library activities
- Combined area, *see* Areas
- Community, type, relation to circulation, 25, 48, 367; to supervision, 284-287, 358
- Community activities, *see* Extra-library activities
- Community buildings, *see* Extra-library activities
- Community relations, 1, 2, 48
- Compactness, 351. *See also* Areas
- Competitions, *see* Architectural competitions
- Compton br., Los Angeles county p. l., 228; exterior, il., 2; plan, 229
- Concentric-radial plan, *see* Radial plan
- Concord, N. H., p. l., catalog proximities, plan, 154; children's room, 340, entrance, 341; cubic-foot cost, 69; desk location, 98; entrance, 352; exterior, il., 10; open shelving, 354; plan, 321; plan-arrangement, 321, diags., 336, 337; shipping room location, 197; stack location, 138; staff rooms, plan, 189; student reference work, 121; waterproofing basement, 384; young people's room, diag., 348
- Condemnation suits, 21
- Condensation of water, 384
- Conduits, 391. *See also* Wiring
- Conner and O'Connor, archs., 122, 243, 437
- Construction, building, checklist of details, 384-392
- Construction cost, *see* Costs
- Consultants, *see* Advisory services
- Consulting stands, *see* Stands; Catalogs
- Contracts, 15, 63-67
- Control, *see* Supervision
- "Control estimate," 71-72. *See also* Bids; Contracts
- Conveyors, 420-421; diags., 421
- Coolidge and Carlson, archs., 223, 356, 357, 368
- Copying buildings, *see* Originality
- Cork carpet, 385, 386
- Corridors, *see* Halls
- Costs, computing, 38-44; variations in, 70, 71; per capita, 38, 39, 44; per circulation, 45; construction, 68-74; cubic-foot, 44, 68-74; janitor, 53; operating, 17-18, 52-54; per seat, 39-40; site, 39; stack, 415-416; per volume, 39-40
- Countryman, G. A., cited, 114
- County libraries, with ils. and plans, 368, 370-374. *See also* references on village libraries, whose buildings are equally appropriate for county branches
- Cove lights, 402
- Cram and Ferguson, archs., 241, 255, 289
- Crane p. l., *see* Quincy
- Crestwood br., Yonkers, N. Y., p. l., 222; plan, 223
- Cret, P. P., arch., 301

- Cross and Cross, archs., 155, 364, 365, 394
 Crutchfield, William, arch., 214
 Cubic-foot costs, *see* Costs
 "Cubook," 414-415
 Cunningham, Jesse, cited, 366
- Dallas, Tex., p. l.,** *see* Alexander Sanger br.; Paul Lawrence Dunbar br.
- Dana, J. C., 5
 Dana, Royal, arch., 229
 Dana br., *see* Richard Henry Dana br.
- Danton, J. P., cited, 187
 David A. Howe p. l., *see* Wellsville
 Davis, W. L., cited, 54
 Day, Clarence, cited, 85
 Daylighting, 393-395
 Dayton, O., p. l., 46, 47
 Dayton view branch, Dayton, O., p. l., 234, 248; plan, 249; site, diag., 50
 Dearborn, Mich., p. l., 25, 197, 269; plan, 269
 Decorations, 74, 101, 153
 Deering l., *see* Northwestern Univ.
 De Kalb, Ill., Haish m. l., 211; circulation room with mezzanine, il., 139; exterior, il., 212
 Dempwolf, F. G., arch., 57, 202, 245
 de Neve br., *see* Felipe de Neve br.
 Densmore, Le Clear and Robbins, archs., 167, 249
 Denver p. l., 88. *See also* Smiley br.
 Departments, major, with diags., 76, 77, 79, 342-349. *See also* Subject departments, and names of separate departments
 Deschutes county l., Bend, Ore., exterior, il., and plan, 371
 Description of building, *see* Program
 Design, attractiveness, 1-2, 3, 7-14, 84-85, 145-146, 335, 353; possibilities of L-plan, 242; problems in small libraries, 222. *See also* all illustrations
 Desks, with plans, il., and diags., 93-99, 166-172, 451-458. *See also* Circulation desks; Reference dept., desk
 Detroit p. l., book lovers' room, 123; branches, plan-arrangement, 281, 282, workrooms, 163; catalog location, diag., 347; circulation dept., location, 346; compactness, 351; entrance, 83; location of depts. by floors, 342; mezzanine work space, 351; *New branch libraries*, cited, 383; old building, 4; plan-arrangement, 6, 142, 143, 302-303, 318, 330, 341; plans, 302, 303; reference dept. location, 348; self-charging, 96; shipping room location, 197; stack location, diag., 350; staff rooms, 190; windows, 84. *See also* Francis Parkman br.; Mark Twain br.; Monteith br.; Richard br.; Schoolcraft br.
 Devereaux, Harry, cited, 375
 Dewey, Melvil, 55
 Directional signs and boards, 392
 Discharging, 91, 455-457. *See also* Slipping
 Dixon, F. J., arch., 299
 Documents, 108, 440-441
 Domestic character of building, 284-287
 Donaldson and Meier, archs., 259
 Donors, *see* Gifts
 Doors, 85, 391; il., 103
 Doyle, A. E., arch., 309
 Doyle and Patterson, archs., 253
 Dracut, Mass., Moses Greeley Parker library, 137, 222; plan, 223
 Drainage, 385
 Drawings, *see* Plans
 Drinking fountains, 391
 Drury, Mrs. G. M., cited, 9
 Dudgeon, M. S., cited, 45
 Duffus, R. L., cited, 117
 Dunbar br., *see* Paul Lawrence Dunbar br.
 Dunn, Thomas, arch., 279
 Duquesne, Pa., Carnegie f. l., 9
 Durham, N. C., p. l., 244; plan, 245
- Eagle Rock br.,** Los Angeles p. l., 394; adult reading room, il., 125
 East br., Akron, O., p. l., 17
 East br., Brooklyn p. l., 300
 East Haddam, Conn., Rathbun f. m. l., exterior, il., 371; main reading room, il., 371
 East Orange, N. J., f. p. l., *see* Franklin br.
 East Providence, R. I., Weaver m. l., 256; desk-workroom, plan, 172; plan, 256
 East Side br., Gary, Ind., p. l., 99; plan, 255
 East Side br., Portland, Ore., library, 252; plan, 253
 East Trenton br., Trenton, N. J., f. p. l., plan, 358
 Easthampton, Mass., p. l., 354
 Eastman, L. A., cited, 47, 445
 Eastman, W. R., cited, 13, 446
- Ebbets and Frid, archs., 270
 Economy, construction, 68, 69; maintenance, 53; usable space, 82, 351-352
 Editing, *see* Printing shop; Publicity
 Edmonton, Alberta, p. l., 320, 341
 Edwards, Edward, cited, 3
 Electric eye, 86
 Electricity, *see* Fans; Lighting; Wiring
 Elements in the building plan, arrangement, with plans, 335-354; checklist of, 75-81. *See also* Arrangement of plan; Program
 Elevators, 82, 88, 390, 420. *See also* Booklifts
 Eliot, C. W., cited, 133
 El Monte br., Los Angeles county p. l., 228; plan, 229
 Ely, J. H. and W. C., archs., 274
 Employees, *see* Staff
 Enabling acts, 21
 Engelhardt, N. L. and N. L., jr., cited, 213
 Engineer, consulting, *see* Advisory services
 Enlargement, *see* Remodelling
 Enoch Pratt f. l., *see* Baltimore
 Entrances, description, 82-87; diags., 98, 99; ils., 2, 3, 9, 10, 86, 88, 89, 390; floors, 385; lighting, 405, il., 88; vestibule as part of architectural composition, 222, 226; children's, 83, 147-149, 265-274, 340, il., 84; controlled by desk, 98, 99, 265-282; between two levels, 269. *See also* Levels, sidewalk
 Equipment, *see* Furniture and equipment
 Equipment, mechanical, checklist, 78, 200, 390-392; cost breakdown, 72-74; effect of, on planning, 187, 350-351
 Escalators, 390
 Esdaile, Arundell, cited, 85
 Evanston, Ill., p. l., 91, 128
 Evansville, Ind., p. l., costs, 21, 52, 69, 73; shipping room and garage location, 197; sidewalk windows, 107; plan, 296; plan-arrangement, 296, 297
 Evolution of library buildings, *see* History
 Exhibits, 201-206; circulation dept., 101; display furniture, 204-206, with ils., 463, 464, 466; functions, 181, 201; indoor case, 87, 204, 205-206, il., 205; lighting, 202; outdoor case, 203; ventilation, 202-203; window, 201-203, 326, ils.,

202, 204, diags., 203, 204; workroom, 206
 Exits, fire, 82, 242, 389-390
 Extension dept., *see* Schools dept.; Stations dept.
 Extra-library activities, 207-213; checklist, 78; community center, 9, 284-287; cost, 38; as separable element, 14, 22, 349. *See also* Combination (community) buildings; Lecture rooms; Museums
Fair, E. M., cited, 94, 436
 Faneuil branch, Boston p. l., children's room, il., 153; cost, cubic-foot, 69; entrance, il., 88; intermediates, 121; lecture room, il., 208; plan and arrangement, 254, 255; skylight, 395
 Fans, 392
 Fargo, L. F., cited, 380, 447
 Farmington, N. H., Goodwin l., 222; plan, 223
 Farrell, R. C., arch., 91
 Farrell and Miller, archs., 229
 Faulkner memorial art gallery, 264; plan, 264
 Fees, *see* Advisory services; Architect
 Felipe de Neve br., Los Angeles p. l., 230-231; stack plan, 135; plan, 231
 Ferguson, M. J., cited, 21
 Ferree, C. E., cited, 398
 Fiction, location, 123, 349; statistics, 29, 30, 31, 34
 Field, P. I., cited, 381
 Files, vertical, *see* Vertical files
 Film shelving, 441-442
 Financing, 19-21. *See also* American Library Assoc., standards; Bond issues; Building fund; Pay-as-you-go plan; Public Works Administration grants
 Finishing bench, il., 178
 Fire extinguishers, 392
 Fireplaces, il., 179; children's room, ils., 145, 153; reading room, il., 151
 Fireproof construction, 14, 71, 355
 First floor as principal floor, 288-293, 342
 Fischer, L. L., arch., 373
 Fixtures, electric, *see* Lighting, types of units
 Fletcher, H. F., cited, 129-130
 Fletcher, W. I., 5
 Flexibility, 8, 14, 104, 157, 320-334, 353
 "Flexible library," 266, 308
 Floor area, *see* Areas, floor

Flooring, 385-387, 417
 Fluorescent light, 400, 425
 Folio cases, 117, 465-466; ils., 467
 Fordham br., New York p. l., 194, 276, 341, 362; plan, 277
 Fort Worth, Tex., Carnegie p. l., cost, 69, 73; exterior, il., 86; plan-arrangement, 143, 269, 312-313, 332, 348; plans, 312, 313; shipping room location, 197
 Foundations, 68, 416
 Fowler, P. L., Company, archs., 148, 274, 358
 Francis Parkman br., Detroit p. l., desk location, 98; magazine racks, diag., 439; plan-arrangement, 262, 280; plans, 96, 280; site, 50; stack and staff areas, plan, 190; student reference work, 121; workroom, 168, plan, 168
 Frank O. Briggs br., Trenton f. p. l., 20, 380; plan, 377; service desk, il., 147
 Franklin br., East Orange, N. J., f. p. l., 394; interior, il., 366; plan, 366
 Freeman, M. W., cited, 113
 Fremont br., Los Angeles p. l., plan, 229
 Fremont br., Seattle, Wash., p. l., 220; plan, 221
 French, Morgan, Co., archs., 267
 Fresnel lens, 399, 402
 Friz, C. N. and Nelson, archs., 84, 204, 325
 Frommelt, H. A., cited, 54
 Fuller and Robinson Co., archs., 268
 Functional diagram, 335-338. *See also* Plans
 Functions, 1-12. For functions of individual depts. or rooms, *see* subheading "functions" under each room
 Furniture and equipment, with diags. and ils., 443-467; checklist, 444-445, 467; cost, 68, 69, 73; layout, 58, 404, 443-444; quality and style, 445-446; specifications, 56, 66, 445. *See also* Shelving; Stacks; names of separate items, *e.g.*, Tables; Chairs; etc.; and names of depts.
 Future buildings, 11-12
Gable, J. H., cited, 129
 Ganders, H. S., cited, 54
 Garages, 195-197
 Gardena br., Los Angeles p. l., 224; plan, 225

Gary, Ind., p. l., *see* Bailey br.; East Side br.; Glen Park br.
 Gaylord Bros., 442
 General Electric Co., Newark, N. J., warehouse building, interior, il., 405
 General Fireproofing Co., 427
 General reference dept., *see* Reference dept.
 George O. Carpenter br., St. Louis p. l., 197, 236, 352; entrance, il., 390; plan, 237
 Georgetown br., Washington, D. C., p. l., 85, 148, 149, 282; plan, 283
 Gerould, J. T., cited, 446
 Gerow and Conklin, archs., 83, 88, 104, 263
 Gette, O. J., arch., 223
 Gifts, 13, 15, 16, 18, 19, 355, 367, 368
 Gilbert, Cass, arch., 303
 Gilchrist, H. D., arch., 233
 Githens, A. M., arch., 10, 51, 84, 89, 132, 141, 155, 162, 166, 204, 221, 233, 321, 322, 323, 325, 333, 364, 365, 369, 370, 387, 394, 401; cited, 144
 Glare, 396-404
 Glass brick, 395; ils., 1, 2, 12
 Glen Park br., Gary, Ind., p. l., desk-workroom, plan, 172
 Glendale br., Queens Borough, N. Y., p. l., 83, 85, 148, 268; plan, 268
 Glenville br., Cleveland p. l., 121, 258; plan, 259
 Globe-Wernicke Co., 442
 Globes, 109, 153
 Glover, L. A., arch., 289
 Gogerty, H. L., arch., 2, 229
 Goodhue, B. G., arch., 319
 Goodwin l., *see* Farmington
 Gordon and Kaelher, archs., 120, 176, 179, 329
 Grand Rapids, Mich., p. l., 181, 201. *See also* West Side br.
 Great Barrington, Mass., Mason l., 98; plan, 227
 Green, H. S., arch., 22
 Greendale, Wis., p. l., plan, 213
 Greenslade, S. K., cited, 3
 Greenwich, Conn., library, 189, 211; art gallery, diag., 211
 Greenwich br., Philadelphia f. l., 252; plan, 253
 Grosse Pointe, Mich., p. l., 380
 Grounds, 50, 51, 52, 68, 71, 330, 392
 Guard, door, 86
 Guilbert and Betelle, archs., 274
H-plan, 226; with plans, 240-241

- Hadley, Chalmers, cited, 193, 218, 446
- Hahn and Hayes, archs., 1, 11, 331
- Haish m. l., *see* De Kalb
- Halasz, Andre, arch., 12
- Hall br., Chicago p. l., 69, 99, 121, 260; plan, 260
- Halls, 86-87, 179, 390; exhibition cases in, ils., 87, 205. *See also* Entrances
- Hamel and Engelken, engs., 399
- Hamlin, A. D. F., cited, 140, 141
- Hamlin, Talbot, cited, 466
- Hampden br., Enoch Pratt f. l., Baltimore, 171; plans, 359
- Hannaford, Samuel, and Sons, archs., 376
- Harkness, Albert, arch., 257
- Harrison, N. J., f. p. l., interior, il., 136
- Hart f. l., *see* Townsend
- Harvard Univ. l., 412, 419
- Headicar, B. M., cited, 266
- Heaps, W. A., cited, 380
- Heating and ventilating, 406-411; children's rooms, 151-152; cost, 73; cross drafts, 228-232, 288-293; equipment, 409-411, location, 194-195, diag., 409; newspaper room, 127; stack, 138, 425-427; staff quarters, 189; systems, 406-407, 411. *See also* Air conditioning
- Heltensteller, Hirsch and Watson, archs., 227
- Henderson, R. W., cited, 412, 414
- Henry N. Sanborn br., Bridgeport, Conn., p. l., 256; plan, 257
- Herbert, C. W., cited, 375
- Hermanus Bleecker l., *see* Albany
- Herrald, D. E., arch., 360, 361
- Hershey, Pa., p. l., 214
- Hershey Co., Hershey, Pa., 158
- High Bridge br., New York p. l., 362
- High school students, *see* Intermediates
- Highland, Ill., Louis Latzer m. p. l., 128; plan, 227
- Highland Park, Ill., p. l., 99, 120, 262, 265, 340; plans, 137, 265; wheel plan, diag., 340
- Highland Park, Mich., McGregor p. l., cost, cubic-foot, 69; location of depts. by floors, 342; open plan, 144, 320; plan and arrangement, 323; shipping room, 197; stack location, 138
- Hild br., Chicago p. l., children's entrance, 149, 341; exhibit window, diag., 203, il., 202; plan and arrangement, 294; radial bookcase, 135; shipping room and garage location, 197; staff rooms, 192
- Hill, F. P., cited, 45
- Hill Avenue br., Pasadena, Cal., p. l., 242; exterior, il., 379; plan, 243
- Hilton-Smith, R. D., cited, 405
- Hinchman and Grylls, archs., 273
- Hirshberg, H. S., cited, 144, 349
- History dept., local, 117, 187; il., 114; plan, 113
- History dept., workroom, diag., 176
- History of library buildings, 3-12, 216, 252, 335
- Hodgdon, C. F., and Son, archs., 260
- Holabird and Root, archs., 290
- Hollow square plan, 314-316, 348, with plans
- Hollywood br., Los Angeles p. l., children's room, il., 151
- Holmes, G. A., arch., 399
- Homestead, Pa., Carnegie l., 9
- Homewood br., Carnegie l., Pittsburgh, 99, 252; plan, 253
- Hooper, P. M., arch., 134
- Hopper, F. F., cited, 136
- Hornbostel, Henry, arch., 127, 140, 264
- Horvitz, A. B., cited, 49
- Hot air heating, 406
- Houston, Tex., p. l., cost, operating, 52; exhibit cases, 204; location of depts. by floors, 342; plan and arrangement, 288, 289, 341; population growth, 25; ventilation, 351
- Howard m. l., New Orleans, 4
- Howard Univ., Washington, D. C., stacks, il., 422
- Howe and Church, archs., 256, 257
- Howe br., *see* John A. Howe br.
- Howe p. l., *see* Wellsville
- Hoyt m. l., *see* Merrimac
- Hunt, Myron, arch., 82, 238, 264, 293
- Hunt and Allan, archs., 221
- Huntington, D. R., arch., 221
- Hunt's Point br., New York p. l., 148, 278, 341, 362; plan, 279
- Hurt, Peyton, cited, 114
- Hyannis, Mass., p. l., 127
- Ibbotson, L. T., cited, 114**
- Ideas, gathering, 13, 18, 23, 58, 236
- Illuminating Engineering Soc., cited, 403, 405
- Index stands, *see* Stands, consulting
- Indianapolis p. l., circulation dept. location, 346; location of depts. by floors, 342; office-workroom area, 179, 185, plan, 186; plan, 301; plan-arrangement, 142, 143, 222, 240, 292, 300, 302, 318, 341; shipping room location, 197; stack location, 350, diag., 142
- Indirect lighting, *see* Lighting
- Industrial dept. diag., 176; plan, 112; equipment, 116
- Information desk, 93, 101, 110
- Ingersoll memorial building, *see* Brooklyn p. l.
- Insulation, 384, 391
- Interior, Dept. of, library, Washington, D. C., stacks, il., 423
- Intermediates, provision for at branches, with plans, 280-283; reading rooms, 14, 123-124, 149-150, plan, 120, ils., 120, 121; relation to other major elements, 348, diag., 344; school reference work, 120-121, 150
- Irving br., *see* Washington Irving br., Brooklyn, and Washington Irving br., Los Angeles
- Irving Trust Co., New York, banking room, il., 404
- "Island" desk, *see* Circulation desks
- Ives, H. E., cited, 396
- Janitor, costs, 17, 53; equipment, with diags., 53, 194, 392; living quarters, 54, 194; service, 52-54, 399**
- Jast, L. S., cited, 112, 144, 326
- Jemne, Magnus, arch., 121
- Jenkinson, Hilary, cited, 466
- Jennings, J. T., cited, 9, 55, 85
- Joeckel, C. B., cited, 21, 50, 112, 375, 383
- John A. Howe br., Albany, N. Y., p. l., 99, 194, 254; plan, 255
- Johnson, P. H., arch., 253
- Johnston, W. T., arch., 261
- Jones, F. M., cited, 49
- Jones l., *see* Amherst
- Jones m. l., *see* Aliquippa
- Juniors, *see* Intermediates
- Juveniles, *see* Children
- Kahn, Albert, Inc., arch., 8**
- Kaiser, J. B., cited, 18
- Kalamazoo, Mich., p. l., *see* Washington Square br.
- Katonah, N. Y., village improvement society library, 248; plan, 246
- Keally, Francis, arch., 10, 89, 132, 162, 321, 333
- Kennedy, H. T., cited, 375, 383, 446, 467
- Keppel, F. P., cited, 117

- Kilham, Hopkins and Greeley, archs., 88, 153, 208, 255, 271, 397
 Kimball and Husted, archs., 399
 Kimberly, E. A., cited, 407
 King, B. S., arch., 134
 Kingsley, M. G., arch., 372
 Kitchens, *see* Staff rooms
 Knight, H. C., arch., 247
 Knight m. l., Providence, R. I., 7, 69, 197, 320
 Koch, T. W., cited, 446, 449
 Kuehne, H. F., arch., 291
- L-plan**, 98, 242-245, 270-271, 339, 373
 Lackawanna, N. Y., p. l., plan, 367
 Ladders, 392
 La Grange br., Toledo p. l., 360; plan, 359
 La Jolla br., San Diego p. l., 69, 73, 261; plan, 261
 Lake Forest, Ill., p. l., cost, 69, 73; plan, 286; plan-arrangement, 286, 287, 353; outdoor reading room, 128; reading room, il., 123; shipping room location, 197
 Lanier br., *see* Sidney Lanier br.
 La Pintoresca br., Pasadena, Cal., p. l., 69, 73, 260; plan, 260
 Large city libraries, principles of planning, 288-354; compact: open plan, stack beneath, 320-334; compact: central stack, 308-319; compact: rear stack, 294-307; low and widely extended, 288-293. *See also* names of large city libraries
 Las Cruces, N. M., Thomas Branigan m. l., circulation room, il., 90
 Latzer m. p. l., *see* Highland, Ill.
 Law, Holbert, arch., 214
 Lawns, *see* Grounds
 Learned, W. S., cited, 8
 Lecture rooms, acoustics, 211; checklist, 210-211; cost, 208-209; dimensions, diag., 210; lighting, 210-211; location, 208-209; plans, 211, 359, 365; seating and equipment, 208-211;
 absorbed for children's rooms, 209, 252, 254; basement, 209; branch, 383, il., 208; children's, 151. *See also* Extra-library activities
 Leeds, Eng., p. l., central library interior and bookcases, il., 435
 Legal points, 16, 21-22, 367. *See also* Condemnation suits; Enabling acts
 Legler br., Chicago p. l., 85, 197, 382; plan, 197
- Leicester, Eng., p. l., 133
 Leland, S. E., cited, 19
 Lescaze, William, arch., 401
 Levels, relation to children's rooms, 83, 340-341, with plans, 266-274; sidewalk, 3, 11, 45, 83-84, 85, 278, 326, ils., 3, 10, 11, 22, 85. *See also* Basements; Main floor; First floor as principal floor; Mezzanine; Second floor
 Liberty Heights br., Springfield, Mass., city library, 69, 98, 226; plan, 227
 Librarian, as adviser, 13, 16, 23, 55-60; participation of, 17, 56, 443-444; recommendations of, 13; relation to architect, 55; office of, 170, 178-179, diag., 174, il., 179
 Library board, *see* Trustees
 Library Bureau, Division of Remington Rand, Inc., 427, 442, 446, Ch. 42
 Library of Congress, catalog cards, 156; depository catalog, 161; pneumatic tubes, 422; Annex, catalog, il., 403, convertible stack, 419, stack lighting, 423, 424, ventilation, 426
 Lifts, *see* Booklifts
 Lighting, artificial, 396-405; bookcases, 176, 437; card catalogs, 461; catalog and order depts., 157-159; checklist, 404-405; children's rooms, 151; costs, 398-399; entrance, il., 88; exhibit windows, 202; fluorescent, 400, 425; indirect, 401; lamps (bulbs), types of, with diags., 399-400; lecture rooms, 210-211; natural, 393-395; offices, 180; principles, with ils. and diags., 14, 393-399; reading rooms, 128-130, diag., 130; stacks, 11, 14, 138, 423-425, diags., 424; systems, 403-404; table, ils., 114, 398; units (fixtures), types of, with diags., 400-403; workrooms, 165, 180, 182, 404, ils., 165, 166, 182. *See also* Clerestory windows; Day-lighting
 Linden, N. J., f. p. l., proposed design, il. and plan, 12
 Lindsay, G. M., arch., 251
 Linoleum, 385-387
 Literature dept., 131; plan, 132
 Little Compton, *see* Brownell m. l.
 Living quarters, janitor, 54
 Loans, *see* Bond issues
 Lobbies, *see* Entrances
 Local history rooms, *see* History, local
- Location, 1, 18, 45-51, 75
 Lock branch, Toledo p. l., 362
 Lockers, staff, 188. *See also* Staff rooms
 Lockport, N. Y., p. l., children's room, il., 150
 Logan, H. L., cited, 396
 Long Beach, Cal., p. l., 83, 362-363; circulation lobby, il., 361; entrance, il., 362; plan, 360
 Longmeadow, Mass., Richard Salter Storrs l., 258, 396; exterior, il., 369; plan, 259
 Longview, Wash., p. l., 240; plan, 241
 Loring, C. G., arch., 134, 225, 227; cited, 71
 Los Angeles county p. l., *see* Compton br.; El Monte br.; South Gate br.; Torrance br.
 Los Angeles p. l., capacities, 35; catalog location, 347; charging desk, 96, 99; circulation dept. location, 346; entrance, 352; exhibit cases, il., 205; exhibit equipment, 206; general reference dept., 114; *Handbook of the branches*, cited, 128, 228, 383; location of depts. by floors, 342; meeting room, 209; plan-arrangement, 6, 7, 144, 303, 317-318, 341; plans, 317, 318, 319; population growth, 25; shipping room and garage location, 196; slipping desk, il., 457; stack location, 138, 140, 143, diag., 350; staff rooms, 190; subject-departmentalization, 112, 113, 114, 324, 348, diag., 349; trustees' room, 178; workroom location, 176
 Los Angeles p. l. branches, basements, 351-352; building specifications, 67, 382-383, with plans, 228-231, 236, 237; desk location, 99; lecture room furniture, 151; outdoor reading rooms, 128; rented buildings, 17; sites, 48; toilets, 194; workrooms, 163. *See also* Angeles Mesa br.; Eagle Rock br.; Felipe de Neve br.; Fremont br.; Gardena br.; Hollywood br.; Richard Henry Dana br.; Robert Louis Stevenson br.; Sidney Lanier br.; Washington Irving br.; Wilmington br.; Wilshire br.
 Louis Latzer m. p. l., *see* Highland, Ill.
 Louisville, Ky., f. p. l., 88
 Lowe, J. A., cited, 24, 68, 79, 166, 193, 368, 369
 Lucius Beebe m. l., *see* Wakefield

- Luckeish, M., cited, 396
 Luniline tubes, 399
 Lunchroom, *see* Staff rooms
 Lydenberg, H. M., cited, 6, 118, 357
 Lyford and Magenau, archs., 10, 321
 Lyle, J. M., arch., 273
 Lythgoe, F. M., cited, 126, 396
- McColvin, L. R.**, cited, 112
McComb, D. Q., cited, 54, 67, 228, 383, 392
McCormick, Donald, arch., 233; cited, 49
McCullough, Ethel, cited, 85
McDiarmid, E. W., jr., cited, 106
Macdonald, A. S., cited, 266
McGhee, Percy, arch., 90
McKim, Mead and White, archs., 277
McKinley br., Sacramento, Cal., f. l., plan, 213; workroom, il., 173
McMillan f. l., *see* Youngstown
 Magazines, *see* Periodicals
 Maginnis and Walsh, archs., 255
 Mail counter, il., 177
 Main floor, children's room, 340-341; major depts., with plans, 288-293, 342. *See also* Levels; Second floor
 Maintenance, building, 52-54, 82, 392, 393, 398-399. *See also* Costs, operating; Janitor
 Major departments, *see* Departments
Mamaroneck, N. Y., f. l., 222, 266, 361; plan, 267
Manchester, Eng., p. l., 140, 144
Manchester, N. H., city library, 83, 320
Mann, Margaret, cited, 160
 Manuscripts, 441, 466
 Maps, shelving and cases, 463-465; ils., 465, 466
Mark Twain br., Detroit p. l., 98, 280-281; adult reading room, il., 124; exterior, il., 380; plan, 281
Marston and Maybury, archs., 227, 243, 379
Marston, Van Pelt and Maybury, archs., 243
Martin m. l., *see* York
Marvin, Cornelia, cited, 446
Mason City, Iowa, p. l., 288, 290, 349; plan, 290
Mason l., *see* Great Barrington
Massillon, O., p. l., *see* West Side br.
 Mastipave, 197
Mattapan br., Boston p. l., clerestory, 394; cost, cubic-foot, 69; desk location, 98; intermediates, 121; plan and arrangement, 234; reading and meeting room combined, 209
Matthews and Denison, archs., 243
Mayberry, E. L., arch., 360, 361
Maybury, *see* Marston and Maybury
 Mechanical equipment, *see* Equipment, mechanical
Mecks, E. V., arch., 404
 Meeting rooms, *see* Lecture rooms
Mellon, Paul, bookcases in residence of, il., 440
 Mending, *see* Workrooms, mending
 Men's quarters, *see* Staff rooms
Mercantile l., Philadelphia, 4
 Mercury vapor lamps, 399
Merrimac, Mass., Hoyt m. l., 222; plan, 223
Metuchen, N. J., f. p. l., exterior, il., 374
Mezzanine, corridor, il., 162; reading rooms, 112, 120, 330, ils., 118, 132, 411; reference rooms, 105; sorting room, il., 178; stack, 103, 115, 135, 137, 180, diags., 135, ils., 116, 136, 139, 363, 411, 413; stack, two-level, plan, 180, il., 116; staff rooms, 192; in unused space, 362; workrooms, 182-184; work space over stacks, 173, 236, il., 136, plan, 174. *See also* Levels
 Microphotography workroom, plan, 187
Miller, O. C., arch., 241
Miller and Martin, archs., 103, 297
Miller and Warnecke, archs., 225
Milwaukee p. l., 17, 360, 381
 Mimeographing room, 180
Minnesota, Univ. of, library, 11
 Mirrors for supervision, 321
Mishawaka, Ind., p. l., 361
Mitchell, J. H., arch., 10, 239
Mitchell, S. B., cited, 45, 47
Mobile, Ala., p. l., 143, 300
Monroe br., Rochester, N. Y., p. l., 83, 203, 271; plan, 271
Montavilla br., Portland, Ore., p. l., exterior, il., 377
Montclair, N. J., f. p. l., 128
Montclair br., Oakland, Cal., f. l., plan, 225
Monteith br., Detroit p. l., 69, 272, 282, 295, 341; plan, 273; radiators, diag., 409
Monterey, Cal., p. l., *see* New branch
Moon, P. H., cited, 396
Moorestown, N. J., f. l., 214
Morgan College, carrells, il., 418
Morgan l., *see* Pierpont Morgan l.
Morley, Christopher, cited, 436
Morse, Anna L., 107
- Moses Greeley Parker l.**, *see* Dracut
Mt. Pleasant br., Cleveland p. l., 360
Mt. Pleasant br., Washington, D. C., p. l., 148, 149
Mt. Vernon, N. Y., p. l., catalogs, il., 459; central vs. branch size, 26; charging desk, 457, il., 458; children's room, plan, 149, ils., 150, 152; emergency exit, 82, 390; enlargement, 363, 366; financing, 355; interior, il., 394; intermediates location, 348; lighting, 398; open shelving, 354; plan-arrangement, 276; plans, 364, 365; preparatory dept., il., 155; shipping room and garage location, 197
 Moving picture theatre combined with library, 207
Muhlenberg Bros., archs., 128
 Multigraph room, 160
Multnomah county l., *see* Portland
Munro, W. B., cited, 2
Munthe, Wilhelm, cited, 85
 Museums, 211-213; diag., 211; il., 212; plans, 238, 264, 271, 285, 287, 357. *See also* Extra-library activities
 Museums Assoc. (British), cited, 212-213
 Music dept., 117; plan, 115
 Music, shelving, 436, 438; diags., 436, 438. *See also* Phonograph records
Mylchreest and Reynolds, archs., 270
- Nashville, Tenn.**, Joint univ. libraries, 397
 National Assoc. of Building Owners and Managers, 61; cited, 52
 Need for a building, 17
Needham, Mass., f. p. l., 240; plan, 241
 Neighborhood, *see* Community, type
 Neighboring libraries, 25, 140
New br., Monterey, Cal., p. l., 99; plan, 225
New Haven, Conn., f. p. l., 46
New Orleans, *see* Howard m. l.
New Orleans p. l., 266
New Rochelle, N. Y., p. l., 85
New Rochelle, College of, newspaper racks, il., 463
 New School for Social Research, New York, reading room, il., 398
New York, *see* Astor l.
New York p. l., central library: book conveyor, 421; entrance, 83, 85, 86; outdoor reading room, 127;

- plan, 6; site, 45; stack location, 140, 143, 294, 304, 320; window study tables, 419;
branches: bookstock statistics, 135-136; sites, 50. *See also* Fordham br.; High Bridge br.; Hunt's Point br.; 135th St. br.; 67th St. br.; Wakefield br.
- New York World's Fair, administration building, restaurant, il., 399
- Newark, N. J., p. l., book storage, 133; cited, 51, 163, 383; entrance, 83; location, 50; plan-arrangement, 6, diag., 351; vault, 181. *See also* Clinton br.; North End br.; Vailsburg br.; Weequahic br.
- Newberry l., Chicago, 5, 140
- Newfield br., Bridgeport, Conn., p. l., 99, 256; plan, 257
- Newman, R. G., cited, 54
- Newspaper building, comparison with, il., 8
- Newspaper collection, proximities, 108; shelving, 439-440, 463, il., 417; statistics, 30, 31
- Newspaper rooms, equipment, 127, 406; il., 463; functions, 126-127; plan, 126; ventilation, 406
- Newton, Mass., f. l., *see* Auburndale br.; Newton Centre br.; Waban br.; West Newton br.
- Newton Centre br., Newton, Mass., f. l., 250; plan, 251
- Newton and Murray, archs., 125
- Noise reduction, 14, 388-389; lecture rooms, 211; offices, 159, 179, 209; ventilating system, 406. *See also* Reading rooms; Reference dept.; Workrooms
- Norberg, E. L., arch., 95, 251
- North Berkeley br., Berkeley, Cal., p. l., 214
- North br., Tulsa, Okla., plan, 233
- North End br., Newark p. l., 274
- Northeast br., Trenton, N. J., f. p. l., 148
- Northeast br., Washington, D. C., p. l., 85
- Northwestern Univ., Charles Deering l., 85, 206, 268
- Oakland, Cal., f. l., 17, 85, 381. *See also* Montclair br.; Piedmont br.
- Oakley br., Cincinnati p. l., 69, 224; exterior, il., 381; plans, 225, 381; reading room, il., 382
- Oberlin, O., college l., 20, 214
- Obsolescence, 366-367. *See also* Remodelling
- Ocean Beach br., San Diego p. l., 69, 73, 246; plan, 247
- Octagon plans, 248, 260
- O'Dell and Rowland, archs., 124, 281, 380
- Offices, administrative, 78, 163, 170, 178-187, plans, 184, 185, 186, 444; business, 179; librarian's, 170, 178-179, diag., 174, il., 179; lighting, 180
- O'Hara and Edson, archs., 12
- Oil, fuel, 410
- Old Greenwich, Conn., p. l., 246, 248; plan, 247
- Omaha p. l., 85
- 135th St. br., New York p. l., exterior, il., 9
- Open plan, definition, 144; discussion with plans, 320-334; evolution, 7, 320
- Open shelf room, 310; definition, 100, 107-108, 123; relation to other major elements, with diag., 344
- Open shelving, capacities, 135-136; distribution of bookstock, 29-31; evolution, 10, 353-354; principles, 14, 133. *See also* Shelving
- Operating costs, *see* Costs
- "Or equal" clause, 63
- Order dept., 154-162; activities, 154, 156; furniture, 159-162; ils., 155; layout, 157-161; lighting, 157-159; plans, 158, 160; proximities, 157, diag., 157; shelving, 159, 161-162
- Oregon, Univ. of, browsing room bookcases, il., 434; rare book room bookcases, il., 440
- Orientation, *see* Sites
- Originality, 58-59, 354. *See also* Ideas
- Osborne, B. A., cited, 113
- Oslo Univ. l., Norway, Björnson room, il., 117
- Outdoor reading rooms, *see* Reading rooms
- Owsley, C. F., arch., 107
- Oxford Univ., cited, 119, 138
- Palmer, C. S., arch., 299
- Palos Verdes, Cal., p. l., 195, 196, 238-239, 286; plan, 238
- Pamphlets, 440-441. *See also* Vertical files
- Parker Hill br., Boston p. l., 121, 254; plan, 255
- Parker l., *see* Dracut
- Parking, 48
- Parkman br., *see* Francis Parkman br.
- Parti, defined, 215-216
- Partitions, 388, 390-391; recessed for furniture, diag., 444. *See also* Supervision, screens
- Pasadena, Cal., p. l., auditorium, 209; bookstock location, diag., 345; catalog location, 347; children's br., 381; circulation dept. location, diag., 346; costs, 69, 73; entrance, il., 82; floor area, 41; intermediates' location, 348; janitor quarters, 194; lecture room furniture, 151; outdoor reading room, 128; plan, 293; plan-arrangement, 288, 292, 300, 330, 352; shipping room location, 197; staff rooms, 190; work and staff areas, 185, plan, 185; workroom location, 176, 177. *See also* Hill Ave. br.; La Pintoresca br.; Santa Catalina br.
- Patios, ils., 82, 127; in Southwestern buildings, with plans, 228-233, 238-239, 242-243, 261, 264. *See also* Reading rooms, outdoor
- Paul Lawrence Dunbar br., Dallas p. l., 224; plan, 225
- Paxton, Mass., Richards m. l., 98, 222; plan, 223; workroom plan, 164
- Pay-as-you-go plan, 19-20
- Peabody Institute l., Baltimore, central hall, il., 4
- Peabody, Wilson and Brown, archs., 146
- Pelich, J. R., arch., 86, 313
- Pennsylvania, Univ. of, library, 155
- Per capita, *see* Bookstock; Circulation; Costs; Support
- Periodical racks, 462-463; il., 462
- Periodical room, combined with reference room, 124-126, plans, 124, 126; equipment, 126-127; proximities, 100, 108; workroom, 126, 177
- Periodicals, 108, shelving, with diags., 109, 438-439, 442; work counter, il., 177
- Perry, E. R., cited, 317
- Personnel, *see* Staff
- Petworth br., Washington, D. C., p. l., 99, 148, 149, 282, 388; plan, 283
- Philadelphia, *see* Mercantile l.
- Philadelphia f. l., basement vault, 195; branch plan-arrangement, 252; capacities, 35; catalog location, 347; costs, 69, 70, 73; entrance, 84; intermediates at branches, 121; laundry, 200; location of depts. by floors, 342; map room, il., 465; plan-arrangement,

- 6, 142, 143, 144, 304, 306, 341; plans, 305, 306, 307; public toilets, 194; reference room, 106, 347; roof reading room, 128; shipping room location, 197; stack location, 350; staff rooms, 192; sunken garden, 268. *See also* Greenwich br.; Ridgeway br.
- Phonograph records, shelving, 438, diag., 436; reproducing room, 117, footnote
- Picture books, shelving, 437-438, diag., 436; ils., 147, 152
- Picture collection equipment, with ils., 117, 466, 467
- Piedmont br., Oakland, Cal., f. l., 224; plans, 164, 225
- Pierpont Morgan l., New York, 71
- Pierson and Wilson, archs., 403
- Pierson, J. N., and Son, Inc., archs., 374
- Pine Point Br., Springfield, Mass., city library, 360
- Pittsburgh, *see* Carnegie Institute
- Pittsburgh, Carnegie l., 135, 181, 252, 254, 380. *See also* Homewood br.
- Plachek, J. W., arch., 111, 227, 259, 295
- Plaister, C. D., cited, 386
- Plan-arrangement, *see* Arrangement of the plan
- Planning, analysis of, 157; recent plans, 215-354; history, 3-12; list of elements to be included, 75-81; principles, 13-14, 23, 218, 335-354; procedure, 335-337. *See also* Arrangement of the plan
- Planning services, *see* Advisory services
- Plans (the drawings), contract, 63-64; functional diagrams, with ils., 335-341; preliminary, for building program, 23, 55-58, 335-337; relation to furniture, 443-444; study of, 80
- Planting, *see* Grounds
- Pleasant Ridge Br., Cincinnati p. l., 209, 220; plans, 221, 409
- Pleasanton, Cal., p. l., 214
- Plumbing, cost percentage, 73
- Plummer m. l., *see* Auburndale br.
- Plywood, 387, 388
- Pneumatic tube system, 200, 422
- Ponca City, Okla., Carnegie l., 69, 261, 265; plan, 261; wheel plan, diag., 340
- Poole, W. F., cited, 5, 11, 140, 193
- Population, growth, 24-25, 44; relation to bookstock, 28-32; relation to building size, 26-27, 38; relation to personnel, 35-37; standards, 25
- Port Washington, N. Y., p. l., 244; plan, 245
- Portland, Ore., Multnomah county l., circulation dept. location, 346; janitor's quarters, 194; location of depts. by floors, 342; plan, 309; plan-arrangement, 6, 7, 143, 308, 310; public toilets, 194; reference dept. location, 348; shipping room location, 197; stack location, 140, 144. *See also* East Side br.; Montavilla br.; Rose City Park br.
- Post offices, comparison with, 7, 38; il., 7
- Power, E. L., cited, 145
- Pratt l., *see* Baltimore
- Preparatory depts., *see* Catalog dept.; Order dept.
- Printing shop, 181, 200
- Prints, shelving, ils., 466, 467
- Program, building, elements and areas, 75-80; schedule of requirements, 22, 23, 43, 55, 56, 75-78; trustees' duties and procedure, 15-23. *See also* Areas
- Providence, *see* Knight m. l.
- Providence, R. I., p. l., closed shelving, 353; book storage, 133, 140; branch desk placement, 99, plan-arrangement, diag., 338; plan, 5; Standard Library, 123; subject-departmentalization, 348, 349, diag., 348; vault, 181. *See also* Smith Hill br.; Wanskuck br.
- Proximities, *see* Catalog, public; Catalog dept.; Children's rooms; Circulation dept.; Reading rooms; Reference dept.; Stacks; Subject depts.
- Public opinion, 18
- Public Works Administration, bids, 65; contracts, 66; grants, 20, 71-72; regulations, 67
- Publicity, 181
- Pump, sump, 200, 385
- Purposes, *see* Functions
- Putnam and Cox, archs., 16, 114, 234, 285
- Quatrefoil** plan, with plans, 258-259
- Queen Anne br., Seattle, Wash., p. l., 252, 254; plan, 253
- Queens Borough, New York, p. l., lighting, 176; operating cost, 52; plan, 298; plan-arrangement, 298; sunken garden, 83, 148; 268, il., 85. *See also* Glendale br.
- Quincy, Mass., Thomas Crane p. l., 244, 270; plan, 245
- Radial** plan, with plans, 260-264, 302-303, 317-319, 339-340
- Radiators under or behind bookcases, diag., 409. *See also* Heating and ventilating
- Railings, 95
- Rainey, T. M., arch., 225, 381, 382
- Rainsford, Kerr, arch., 246
- Ramps, 88, 311
- Ramsey, C. G., cited, 210
- Rand, G., cited, 398
- Rathbun l., *see* East Haddam
- Raymond, W. L., cited, 20
- Readers, *see* Seating
- Reader's adviser, 3, 101
- Reading rooms, areas, 128-132; capacities, 34-35, 130-132; checklist, 76-77; functions, 121-122, 281; ils., 109, 117, 122, 123, 124, 125, 357; lighting, 128-130, diags., 130; location, 310, 312; noise reduction, 105-107, 407; proximities, 122-126; shelving, 134-135; general, 123; outdoor, 127-128, il., 127; roof, 127-128. *See also* Intermediates, reading rooms; Patios; Reference dept.; Seating
- Redwood City, Cal., p. l., cost, 69, 73; exterior, il., 10; plan, 239; plan-arrangement, 228, 234, 239, 248, 265; shipping room location, 197; student reference work, 121
- Re-entrant V plan, *see* V-plans
- Reeves, C. E., cited, 54
- Reeves, R. R., arch., 241
- Reference book, definition, 102
- Reference dept., 102-121; alcove, 103, 104, il., 104, plan, 103; combined with local reference library, 328; desk, 103, 109-110, 458-459; functions, 102-103, 114; furniture, 109; ils., 103, 110; materials, 104-105; noise-reduction, 105-107; periodicals, 124-126; plans, 103, 105, 106, 107, 111, 124; proximities, 104, 107-110, with diags., 344-348; relation to other major elements, 347-348, diag., 344; separation from other elements, 104; shelving, 109; in small libraries, 103-104; workroom, 103, 109-110, 175-176; workroom equipment, 187. *See also* Furniture and

- equipment; Intermediates, reading rooms; Subject departments
Reference desk, *see* Reference dept., desk
Regional obligation, *see* Neighboring libraries
Registration, 27, 91, 97
Registration desk and equipment, 457
Remodelling, 355-367; library buildings, 361-367, *ils.*, 362, 363, plans, 363, 366, 367; library services during alteration, 366; non-library buildings, 360-361, plan, 359; principles, 355, 358-360; residences, 355-360, *ils.*, 355, 356, plan, 358. *See also* Obsolescence
Rented quarters, 13, 17, 50, 378, 380-381; plan, 378
Requirements, building, *see* Program, building
Reserving books, 92
Residences, *see* Remodelling
Rest rooms, *see* Staff rooms
Reuben McMillan f. l., *see* Youngstown
Reversed desk, *see* Circulation desks
Reynolds l., Rochester, N. Y., 114, 328
Richard br., Detroit p. l., reading room, *il.*, 119
Richard Henry Dana br., Los Angeles p. l., 242; plan, 243
Richard Salter Storrs l., *see* Longmeadow
Richards m. l., *see* Paxton
Richardson, H. H., arch., 4, 5
Richardson, J. E., arch., 223
Richmond, *see* Virginia state library
Richmond, Va., p. l., basement vault, 195; building program, 19; catalog location, 347, proximities, *diag.*, 157; circulation dept., *il.*, 94, location *diag.*, 346; floor area, 41; location of depts. by floors, 342; open shelving, 354; plan-arrangement, 6, 222, 240, 269, 310-311, *diag.*, 351; plans, 94, 311; population growth, 25; reference dept. location, 348; stack location, 138, 140, 143, 144, *diag.*, 350; subject-departmentalization, 349; sunken garden, 268
Ridgeway br., Philadelphia f. l., 4
Right-left plan, 220-225, 338; with stack, 226-239
Ritchie, J. H., and Associates, archs., 241, 251
Riverside, Ill., p. l., 211, 242, 388; plan, 243; reading room, *ils.*, 122, 437
Robert Louis Stevenson br., Los Angeles p. l., 250; plan, 251
Robinson and Campau, archs., 85, 279
Rochester, N. Y., p. l. (Rundel memorial building, central), acoustics, 388; administrative offices, 185, plan, 184; bookcases, *diags.*, 430, 431; business and economics dept., *il.*, 176; capacities, 29, 35; catalog location, 347; charging desk, 96, 99; circulation dept. location, 346; cited, 212; entrance, 352, plan, 87; exhibit cases, *diag.*, 204; extension dept., plan, 180; general reference dept., 114, 347; librarian's office, 179, *il.*, 179, plan, 184; lighting, 129; location, 50; location of depts. by floors, 342; mezzanine reader space, 351; open plan, 7, 144; open shelving, 353; plan-arrangement, 327-328, 330, 332; plans, 327, 328, 329; proximities, 115; rented building, 17, 381; service zone, *diag.*, 175; shipping room location, 197; skylight, 394; stack location, 138, 140, *diag.*, 350; subject-departmentalization, 113, 114, 115, 321, 349; workroom location, 176, 185; young people's reading room, 124, 348, plan, *il.*, 120. *See also* Arnett br.; Monroe br.
Rockford College, Rockford, Ill., 427; stack plan, 419
Roden, C. B., cited, 336, 382
Rogers, Howard, arch., 255
Rogers, J. G., cited, 55
Rogers, Lincoln, arch., 220
Roof-garden, 127-128, 190
Roof reading rooms, *see* Reading rooms
Room schedule, 56, 76-78
Rose City Park br., Portland, Ore., p. l., workroom-staff lounge, *il.*, 189
Roselle, N. J., m. l., 72, 98, 232, 352, 388; circulation desk, *ils.*, 166, 387; exterior, *il.*, 370; exterior of stack room, *il.*, 141; plan, 233
Ross, A. S., arch., 249
Routes, book, 80-81, 170, *diag.*, 81; cataloging, 157-160, *diags.*, 158, 160, 344; reader, 23, 80-81, 82, 113, 312-319, 326, 336-337, 352, *diag.*, 344
Rundel memorial library, *see* Rochester
Runnymede br., Toronto, Ont., p. l., Ruoff, Allen, arch., 237
Rush, C. E., cited, 120
Ryland, C. J., arch., 225
Sacramento, Cal., p. l., *see* McKinley br.
Safes, *see* Vaults
St. Louis p. l., Architectural l., 119; branch shipping room, *il.*, 195; exhibit windows, 201; expansion, 362; plan-arrangement, 6, 294, 352; reference room, *diag.*, 130; windows, 84. *See also* George O. Carpenter br.
St. Paul, Minn., p. l., 342; Skinner room, *il.*, 121
Salient, Ore., post office, exterior, *il.*, 7
Salient V plans, *see* V-plans
Salisbury, H. A., arch., 372
Salt Lake City p. l., *see* Sprague br.
San Antonio, Tex., p. l., exterior, *il.*, 22. *See also* San Pedro Park br.
Sanborn, H. N., 256
Sanborn branch, *see* Henry N. Sanborn br.
San Diego, Cal., p. l., 220, 381. *See also* La Jolla br.; Ocean Beach br.; University Heights br.
San Francisco p. l., 6, 84, 352
Sanger br., *see* Alexander Sanger br.
San Pedro Park br., San Antonio, Tex., p. l., 240; exterior, *il.*, 378; plan, 241
Santa Barbara, Cal., f. p. l., 99, 128, 197, 264, 353; main room, *il.*, 140; plan, 264; reading court, *il.*, 127
Santa Catalina br., Pasadena, Cal., p. l., 226; exterior, *il.*, 379; plan, 227
Sargeant-Smith, Bessie, cited, 173
Saugerties, N. Y., p. l., 134; plan, 134
Savage, F. A., cited, 48, 112
Scarborough, Eng., p. l., entrance hall, *il.*, 87; lending dept., *il.*, 94; reference room, *il.*, 110
Scarsdale, N. Y., p. l., 357; reading room, *il.*, 355
Schirmer, R. F., arch., 298
Schmidt, J. W., arch., 298
Schmill Brothers, archs., 150
School reference work, 121, 150, 379-380
Schoolcraft br., Detroit p. l., 258; plan, 259
Schoolhouse branches, 378-380
Schools, cost compared with libraries, 69-70
Schools dept., 33, 181-182; plan, 180
Schultz, H. C., cited, 466

- Scott, J. A., cited, 356
 Scranton, Pa., p. l., 25
 Screens (partitions), *see* Supervision
 Scribner, B. W., cited, 407
 Sea Mills br., Bristol, Eng., p. l., 133
 Seating, capacities, 33, 34-35, 41-43, 131-132, diags., 131, 132; cost, 39-40; between stack and windows, 140. *See also* Chairs
 Seattle, Wash., p. l., 144. *See also* Fremont br.; Queen Anne br.
 Second floor, for children's rooms, with plans, 272-274, 282-283, 340-341; as principal floor, with plans, 288, 298, 299, 302-307, 341-342. *See also* Levels
 Secretary, *see* Staff, office
 Self-charging, 96-97
 Seniors, *see* Intermediates
 Service area, branch, *see* Branches
 Service desk, *see* Circulation desks
 Services, checklist, 76-78
 Settelmayer, J. C., cited, 208
 Sewickley, Pa., p. l. (Clause memorial), 232; plan, 233
 Sexpartite plan, 226-239, 338-339
 Sharon, Mass., p. l., 133-134; plan, 134
 Shaw, R. P., cited, 206
 Shaw, R. R., cited, 436
 Sheffield, Eng., p. l., 112
 Shelf list, 156, 160-161
 Shelving, with diags., 428-442; adjustment, 431-434; backing, 429-431; bookcase bases, 437; bookcase lighting, 437; capacities, 436; checklist, 442; depth and spacing, 435-436; dimensions and details, 429-436; height, 434-435; material, 428-431; necessity for maximum space, 133, 428; in reading and subject rooms, 116-117, 134-135; relation to walls, 387-388, 432-433; sloping shelves, with diags., 436-437; sorting rooms, 178; steel stack, 412-418, with ils., and diags.;
 children's books, 434; documents and pamphlets, 440-441; film, 441; folios, 117, 465-466, 466; maps, 463-465, ils., 465, 466; manuscripts, 441; music and picture books, 437-438; newspapers and folios, with ils. and diags., 417-418, 439-440; periodicals, 438-439; phonograph records, 438; sorting rooms, 178; thin books, diag., 436. *See also* Blind, work with; Bookcases; Catalog dept.; Children's rooms; Open shelving;
 Order dept.; Reference dept.; Stacks
 Shipping rooms, 195-197, 385; ils., 195, 197; plans, 196, 197
 Shirer, H. F., arch., 149, 243
 Show cases, *see* Exhibits
 Sibley, E. K., arch., 147, 377
 Sidewalk level, *see* Levels
 Sidney Lanier br., Los Angeles p. l., 230, 231; plan, 230
 Signs, 369, 392
 Sites, 45-51; adaptation of small buildings, with plans, 220-221; cost, 39, 50; gift, 15-16; influence on children's room location, with plans, 265-274; light and ventilation, 230, 232; restricted plots, with plans, 276-277, 296-297, 345; use of, 56, 80; utilized for basement and shipping rooms, 196-197. *See also* Basements; Levels; Location
 67th St. br., New York p. l., 275; plan, 275
 Size, building, 38-44
 Skelton br., *see* Charles Skelton br.
 Sketch plans, *see* Plans
 Skylights, 328, 394-395; ils., 4, 90, 139, 140, 357
 Slay, R. F., arch., 373
 Sleeper, H. R., cited, 67, 210
 Slipping desks, 91, 92, 96; il., 457
 Sloping shelves, 435 436. *See also* Shelving
 Small libraries, *see* Branches; Village libraries
 Smiley br., Denver, Colo., p. l., 250; plan, 251
 Smith, Brandon, arch., 92, 235
 Smith, Hinchman and Grylls, archs., 273
 Smith, S. T., cited, 213
 Smith and Bassette, archs., 259, 369
 Smith and Walker, archs., 249
 Smith Hill br., Providence, R. I., p. l., 171, 256; desk-workroom, plan, 172; plan, 257
 Smoking rooms, il., 128. *See also* Staff rooms
 Snead and Co., 427; cited, 140, 412
 Snyder, R. W., arch., 248
 Solander boxes, 467
 Solano County, Cal., f. l., 20, 370; exterior, il., 369; plan, 369
 Somerville, Mass., p. l., 7, 100, 144, 320, 341; plan, 320
 Sorting rooms, 418; il., 178
 Soule, C. C., cited, 13, 84, 446
 Sound-absorption, *see* Noise reduction
 Soundproof room, 117
 Soundproofing, *see* Noise reduction
 South Avenue br., Bridgeport, Conn., p. l., 171, 256; desk-workroom, plan, 172
 South Berkeley br., Berkeley, Cal., p. l., 226; plan, 227
 South Brooklyn br., Cleveland p. l., service desk, il., 456
 South Gate br., Los Angeles county p. l., circulation desk, il., 91
 Special collections, 77, 118-119
 Specifications, 63-67; furniture, 56, 66, 445-446; stacks, 63, 427
 Sprague br., Salt Lake City p. l., 209, 266, 361; plan, 267
 Springfield, Ill., Lincoln l., proposed exterior, il., 3
 Springfield, Mass., city library, entrance, 83; open plan, 7, 144, 320; radial bookcase, 135; stack proximities, 100. *See also* Liberty Heights br.; Pine Point br.
 Springfield, Mass., Museum of fine arts, reading room, il., 401
 Stacks, principles, 14, 136, 140-142; definitions, 412; diags., 135, 137, 142, 143, 144, 413-414; proximities and access, 100, 108, 138-142, 181, 349, 350; in small libraries, 137-138, 226, plans, 134; basement, 138, 144, with plans, 320-334, ils., 413, 422, 423; central (tower), 6, 7, 143-144, 308-319, 416-417; closed, 5, 6, 29-31; convertible, 419-420; mezzanine 2-level, 103, 115, 135, 137, 180, diags., 135, ils., 116, 136, 139, 363, 411; open shelf, 244, 245, plans, 57; radial, 135, 294; rear, 142-143, 294-307, il., 141;
 book transportation, 100, 420-422; checklists, 77, 92; communications, 420 423; construction, 416 417; costs, 415-416; dimensions and capacities, 138-142, 413-415; floors, 417; heating and ventilating, 138, 425-427; lighting, 11, 14, 138, 423-425, diags., 424; shelving and equipment, with ils. and diags., 417-423; specifications and contracts, 63, 427
 Staff, participation in planning, 13; statistics, 35-37;
 building, 52-53; branch, 50; catalog dept., 161; children's room, 147, 151; office, 180
 Staff rooms, 14, 188-192; checklist, 77-78, 188, 383; dressing rooms, 188-189; equipment, 188-192;

- il., 189; kitchens and lunchrooms, 189-192; location, 182-183, 192; men's quarters, 92; plans, 189, 190, 191; rest room, 189; smoking room, 192
- Stairs, 83-84, 88, 148-149, 390, 420
- Standard stack shelving, 416-417; diag., 416
- Standards, *see* American Library Assoc.; Bookstock; Circulation statistics; Population; Support; "V.S.C." formula
- Stands, consulting, 109, ils., 411, 458, 459, 460, 463, 464; display, 206, ils., 463, 464
- Stations dept., 33, 181-182; plan, 180
- Statistics, 24-37. *See also* Areas; Bookstock; Branches; Capacities; Catalog dept.; Central vs. branches; Children; Circulation statistics; Population; Reading rooms; Seating; Staff
- Steam heating, 406. *See also* Heating and ventilating
- Steam main, 409-410
- Steam supply, public service, 411
- Stein, C. S., cited, 196
- Steiner, B. C., cited, 28
- Stenographic room, public, 120
- Stevenson br., *see* Robert Louis Stevenson br.
- Stevenson and Studds, archs., 399
- Storerooms, 179, 194-195. *See also* Vaults
- Stores, remodelling, *see* Remodelling
- Storrs l., *see* Longmeadow
- Story hour rooms, 151
- Stott, S. A., arch., 372
- Stratton, E. B., arch., 221
- Studensky, Paul, cited, 19
- Students, *see* Intermediates
- Study, desirable for planning, 13, 56, 68, 80
- Study space, individual, 119-120; il., 118
- Sub-contracts, 65-67
- Subject departments, evolution, 5, 6, 7, 348, 354; furniture, 116-118; noise reduction, 105-107; periodicals in, 124, 125; principles, 111-114; proximities, 114-115, 343, 344, 348-349; shelving, 116, 117; workroom equipment, 187; workrooms, 176-177, plans, 112, 113, 115, il., 176; zone of service, 177, diags., 175, 176; Baltimore, 324-327; Brooklyn, 332-334; Cleveland, 314-316; Fort Worth, 312-313; Los Angeles, 317-319; Rochester, 327-329; Toledo, 330-331. *See also* Art dept.; Business and economics dept.; History dept.; History dept., local; Industrial dept.; Music dept.
- Sump pump, 200, 385
- Sunken gardens, ils., 84, 85
- Supervision, 14, 114, 133-134, 337, 352; control by central desk, 215-264, from two desks, 265-274, of entry (other areas separately controlled), 275-287; service zone, 332, diag., 175; screens as an aid, 254, 258, 323; of children, 146, 147, 148, 265-274, 340-341; circulation dept., 94-99; in domestic-type buildings, 284-287; lecture rooms, 208; reference dept., 110; in remodelled residences, 356
- Supplies, *see* Storerooms
- Support, 13, 17, 18, 27-28, 207, 368-369
- Surplus material, *see* Bookstock, unaccessioned
- Switchboard, 180
- T-shape buildings**, 174
- Table lamps, 396-404; ils., 114, 398
- Tables, reading, with diags., 446-449; il., 411; sizes, with diags., 117, 131-132, 446-449; spacing, 130-132, diags., 131, 132; built around columns, il., 151
- Tables, lunch, ils., 189, 190, 192; student's, 119, il., 118; work, 186-187; 448-449, ils., 165, 168-171, 173, 177, 178, 182, 448-449
- Tarrytown, N. Y., Warner m. l., 235, 265, 286, 354; plan, 235
- Tatum, G. R., cited, 106
- Taxation, *see* Support
- Taylor, Edward and Ellis, archs., 225
- Taylor and Fisher, archs., 418
- Teaneck, N. J., f. p. l., 265, 363, 367; enlargement, plan, 363; junior room, il., 145; stacks, il., 363
- Technical dept., diag., 176; plan, 112
- Telaugraph, 314, 422-423
- Telephones, departmental, 159; mechanical equipment, 200, 391-392; reference dept., 110; stack, 422; switchboard location, 180; workroom, 170
- Temple Univ., microphotography workroom, plan, 187
- Termites, 392
- Terrazzo, 385, 386
- Terryville, Conn., p. l., 220; plan, 221
- Theft of books, *see* Supervision
- Thiele, Walter, cited, 465
- Thomas Branigan m. l., *see* Las Cruces
- Thomas Crane p. l., *see* Quincy
- Thompson, D. E., cited, 54
- Thompson, J. A., arch., 399
- Thompson, W. S., cited, 24
- Thorndike, E. L., cited, 2, 25, 44
- Tilton, E. L., 218; arch., 51, 84, 94, 204, 221, 245, 259, 269, 311, 320, 322, 323, 325, 363, 364, 365, 369, 401; cited, 5, 7, 13, 19, 39, 73, 79, 87, 100, 166, 208, 209
- Time element in building, 18-19
- Tinker, M. A., cited, 398
- Toilet rooms, floors, 385; ventilation, 406; children's, 152; men's, 179; public, 78, 194, 391; staff, 188
- Toledo p. l., bookshelf lighting, 396; bookstock arrangement, 343, 344; branch building specifications, 67; central library capacities, 29, 35; catalog location, 347; circulation dept. location, diag., 346; cited, 47; cost, electrical, 74, percentage breakdown, 73, cubic-foot, 69; desk location, 99; entrance, 304, diag., 87; exit control, 390; exterior, actual, il., 11, proposed, il., 1; financing, 20; general reference room, il., 411; open plan, 7, 144; plan-arrangement, 330, 332, 352; plans, 330, 331; service zone, 177, diag., 175; shipping room and garage location, 197; site, 46; skylight, 394; stack location, 138, 140, 350; subject-departmentalization, 113, 321; waterproofing basement, 385. *See also* La Grange br.; Lock br.; Toledo Heights br.; West Toledo br.
- Toledo Heights br., Toledo p. l., 262; plan, 263
- Torbitt, A. N., arch., 241
- Toronto, Ont., p. l., *see* Boys and girls house; Runnymede br.
- Torrance br., Los Angeles county p. l., plan, 229
- Tower stack, *see* Stack, central
- Townsend, Mass., Hart f. l., 222, 226; plan, 227
- Traffic routes, 46-50
- Trailer truck service, *see* Bookmobiles
- Trefoil plan, with plans, 252-257, 338
- Trenton, N. J., f. p. l., *see* Charles Skelton br.; East Trenton br.; Frank O. Briggs br.; Northeast br.

- Trough reflectors, 398-405
Troughs, *see* Bookracks
Trowbridge, A. G., arch., 403
Trucks, book, 108, 159, 466-467
Trueblood and Graf, archs., 237, 390
Trumbauer, Horace, arch., 307
Trustees, duties, 13, 15-23, 24, 47, 443; relation to architect, 55, 62.
See also Program
Trustees' office, 178-179
Tubby, W. B., arch., 211
Tulsa, Okla., p. l., 49, 98, 351, 394.
See also North br.; West br.
Turner, P. J., cited, 164
Turnstiles, 86, 95; il., 94
Typewriting room, public, 119-120
Typists, *see* Staff, office
- U-plan**, 175, 240; plans, 174, 241
Ulveling, R. A., cited, 50, 168, 174, 280, 375, 383
Unger, N. A., cited, 188
U. S. Resettlement administration building, Greendale, Wis., 213
University Heights br., San Diego, Cal., p. l., 220; plan, 220
Upjohn, H. B., arch., 355
Urban, Joseph, arch., 398
- V-plans**, 50; rectilinear, with plans, 250-251; re-entrant, with plans, 248-249, 339; salient, with plans, 246-248, 339
"V.S.C." formula, 32, 41-44
Vacuum cleaners, 200
Vailsburg br., Newark p. l., 274
Van Rensselaer, Mrs. Schuyler, cited, 4
Vaults, 180-181, 195
Veneer, il., 444
Venetian blinds, 395
Ventilating systems, 406-411. *See also* Heating and ventilating
Ventilators, unit, 410
"Ventilighter," 395
Versen, Kurt, 401
Vertical files, construction details, with diags., 461-462; office, 179, 180; proximities, 105, 108; reference room, 109; subject depts., 116, 117-118
Vestibule, *see* Entrances
Village libraries, 368-370, bookcases, 133-135; circulation desk, 93-94; ils., 368, 369, 370, 371, 372, 373, 374; planning, 218-235; plans, 369, 371, 372, 373; reference work, 103-104; stacks, 137-138; support, 368-369, workroom, 167-171. *See also* village libraries in Chs. 23-26
Virginia state l., Richmond, Va., 71, 393; functional relation of rooms, diag., 335
Vitz, Carl, cited, 113, 262
Volumes, cost, 39-40; in V.S.C. formula, 41-44. *See also* Bookstock
Voorhees, Gmelin and Walker, archs., 404
- Waasdorp**, L. A., arch., 329
Waban br., Newton, Mass., f. l., 98, 168, 248; desk, il., 167; plan, 249
Waid, D. E., arch., 248
Wainscot, 387, 428
Wakefield, Mass., Lucius Beebe m. l., 195, 222, 240, 286, 300, 396; plan, 241
Wakefield br., New York p. l., 278; plan, 279
Walbrook br., Enoch Pratt f. l., Baltimore, 171; plan, 172
Walker, C. H., arch., 134
Walker and Eisen, archs., 229
Walker and Weeks, archs., 116, 259, 296, 315
Walling, G. W., arch., 359
Walls, basement, 384-385; with bookcases, 133, 387-388, 428-436; light reflection, 393; sound reflection, 388-389. *See also* Bookcases
Wallwork, C. H., arch., 189
Walter, F. K., cited, 445, 446, 467
Wanskuck br., Providence, R. I., p. l., 256; plan, 257
Warner m. l., *see* Tarrytown
Warren, Althea, cited, 112
Washbowls, 160, 179, 186, 188, 391
Washington, D. C., p. l., branch children's entrances, 341; branch plan-arrangement, 281, 282; children's dept. office, 151; costs, operating, 52; hollow square plan, 348; space economy, diag., 351. *See also* Georgetown br.; Mt. Pleasant br.; Northeast br.; Petworth br.
Washington Irving br., Brooklyn p. l., 98, 258; plan, 259
Washington Irving br., Los Angeles p. l., 98; plan, 229
Washington Square br., Kalamazoo, Mich., p. l., 190, 224; plan, 225
Washrooms, *see* Toilet rooms
"Watchdog" desk and workroom, *see* Circulation desks, reversed
Waterproofing, 384-385
- Watkin, W. W., arch., 289
Weaver m. l., *see* East Providence
Webb, William, cited, 455
Weequahic br., Newark, N. J., p. l., 148, 274; plan, 274
Wellesley Hills br., Wellesley, Mass., f. l., 242; children's room, il., 149; workroom and mezzanine, plan, 181; plan, 243
Wells, Carolyn, cited, 436
Wells and Hudson, archs., 221
Wellsville, N. Y., David A. Howe p. l., 196, 286-287, 290, 340; plan, 287
Wert, J. E., cited, 49, 380
West br., Tulsa, Okla., plan, 233
West Hartford, Conn., p. l., 69, 73, 83, 196, 270; plan, 270
West Newton br., Newton, Mass., f. l., 220; plan, 221
West Side br., Cleveland p. l., 46
West Side br., Grand Rapids, Mich., p. l., 107, 201, 278; exterior, il., 85; plan, 279
West Side br., Massillon, O., p. l., circulation dept., il., 376
West Toledo br., Toledo p. l., cost, cubic-foot, 69; desk, details, 454, 455, location, 99; exterior, ils., 83, 88; plan, 263; plan-arrangement, 262, 265, 352, 353; radiators, diag., 409; reference alcove, il., 104; shipping room and garage location, 197; specifications, 67, 383; workroom location, 99
Westbury, L. I., Children's l., 381; interior, il., 146
Western Union clocks, 391
Westfield, Mass., Athenaeum, 265, 358, adult reading room, il., 357; exterior, il., 356; plan, 357
Westhoff, M. H., arch., 227
Westinghouse Electric and Manufacturing Co., cited, 405
Westmount, Quebec, p. l., workroom, il., 165
Weston and Weston, archs., 230
Westwood br., Cincinnati, O., p. l., 242; plan, 243
Wheel plan, *see* Radial plan
Wheeler, J. L., cited, 18, 46; adviser, 57, 364, 365
Whelpton, P. K., cited, 24
White and Weber, archs., 139, 212, 221
Whitehouse and Church, archs., 371
Whittlesey, Austin, arch., 231
Wilcox, J. K., cited, 441
Wilder, Vt., p. l., plan, 214
Wildermuth, J. H., arch., 255

- Williams, Edgar, arch., 399
- Wilmington, Del., institute f. l., basement vault, 195; branch registration, 49, survey, 49; capacities, 29; circulation dept. location, diag., 346; cubic-foot cost, 69; entrance, 83; exterior, il., 51; location of depts. by floors, 342; open plan, 7, 144; plan, 322; plan-arrangement, 222, 240, 320, 322-323, 324, 334, 353; shipping room location, 196; skylight, 394, 395; stack location, 100, 138, 140, 350
- Wilmington br., Los Angeles p. l., 242, 270; plan, 243; work and staff rooms, plan, 163
- Wilshire br., Los Angeles p. l., 236; plan, 237
- Wilson, F. W., arch., 127, 140, 264
- Wilson, L. R., cited, 138
- Winchester, Mass., p. l., art gallery, 211; children's room, 340; costs, 69, 73; entrance, 83; plan, 271; plan-arrangement, 242, 270; reading room, il., 397; shipping room location, 196
- Windows, 389, 393, 395; bay, ils., 119, 366. *See also* Exhibits; Lighting
- Winn l., *see* Woburn
- Winslow, Amy, cited, 113
- Winslow, C. M., arch., 264, 319
- Winslow, Mc., p. l., 222; plan, 223
- Winsor, Justin, 5
- Wiring, electric, 391-392, 404-405; for furniture, 443-444
- Wisconsin f. l., commission, 45
- Witwatersrand, Univ. of, Johannesburg, South Africa, reading room, il., 109
- Woburn, Mass., Winn l., exterior, il., plan, 4
- Woltersdorf, Arthur, arch., 277
- Woodland br., Cleveland p. l., 46
- Woodlawn br., Chicago p. l., 276; plan, 277
- Woodyard, Ella, cited, 2
- Workrooms, activities, 77, 99-100, 168, 173; adjoining service desk, 280-281, il., 166; adjoining staff quarters, plan, 163; arcas, 164, 166, 184-186; basement, 182-183; bindery, 198-200; catalog, plans, 174, with diag., 183; checklist, 77; children's room, 150-151, plans, 174, 180, combined with circulation, 174-175; circulation, plans, 168, 169, 170, 171, 172, 174, il., 173; combined with service desk, with plans, 169-172, 174, 256-257; difficulties in V-plans, 246; equipment, 186-187; exhibit, 206; general, plans, 164, il., 165; lighting, 165, 180, 182, 404-405, ils., 165, 166, 182; location, 14, 163-187; mending, 177-178, plan, 199, il., 178; mezzanine, 136, 182-183, plans, 174, 181; microphotography, plan, 187; noise reduction, 167-168, 173, 180, 187; periodicals, 126, 177; principles, 164; reference, 109-110, 175-176; schools, 181-182; size, 164-166; in small buildings, 220-221, 226-227; split-off of work, 95-96, 99, with ils. and diags., 166-174; stack, 419-420; stations dept., 181-182; subject depts., 176-177, plans, 112, 113, 115, 175, 176
- Works Progress Administration, cited, 20
- Wrapping counter, il., 177
- Wyer, J. L., cited, 16, 102, 107
- Wyeth, N. C., arch., 283
- Wyomissing, Pa., p. l., smoking room, il., 128
- Yale Univ. l., 11
- Yonkers, N. Y., p. l., *see* Crestwood br.
- York, Pa., Martin m. l., arrangement, 23; catalog room, il., 182; desk location, 98; evolution of plan, 57; exhibit window, il., 202; plan-arrangement, 244; plan, 245; site, 50; shipping room location, 197
- Young, George, arch., 268
- Young people, *see* Intermediates
- Youngstown, O., Reuben McMillan f. l., 20, 170; circulation desk, plan, 169; reference room, diag., 107. *See also* Central Square br.
- Yust, W. F., cited, 13, 212, 336, 381, 445-446
- Zanzinger, Borie and Medary, archs., 301
- Zone of service, 332, 334; diag., 175

COLOPHON

*Designed by Walter Huxley. Printed and bound at the
Scribner Press. The body text is set in Linotype Granjon, the
title page and chapter headings in Garamond Old Style.
Engravings by the Beck Engraving Co. Printed on Warren's
Cumberland Enamel, 80 pound. Bound in
Holliston Record Buckram.*

UNIVERSAL
LIBRARY



140 677

UNIVERSAL
LIBRARY